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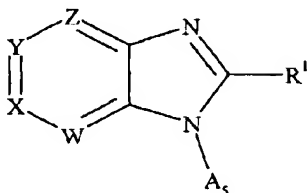
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(54) Title: BENZIMIDAZOLES AND ANALOGUES AND THEIR USE AS PROTEIN KINASES INHIBITORS



(Ix)

(57) Abstract: The invention is directed to physiologically active compounds of the general formula (Ix) and compositions contain-  
ing such compounds, and their prodrugs, and pharmaceutically acceptable salts and solvates of such compounds and their prodrugs,  
as well as to novel compounds within the scope of formula (Ix), and to processes for their preparation. Such compounds and com-  
positions have valuable pharmaceutical properties, in particular the ability to inhibit kinases.



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## BENZIMIDAZOLES AND ANALOGUES AND THEIR USE AS PROTEIN KINASES INHIBITORS

5 This invention is directed to benzimidazoles of formula (Ix), their preparation, pharmaceutical compositions containing these compounds, and their pharmaceutical use in the treatment of disease states capable of being modulated by the inhibition of the protein kinases. Such protein kinases belong especially to the following group: EGFR, Fak, FLK-1, FGFR1, FGFR2, FGFR3, FGFR4, FGFR5, flt-1, IGF-1R, KDR, PDGFR, tie2, VEGFR, ITK and SYK.

10 Protein kinases are a family of enzymes that participate in the signalling events which control the activation, growth and differentiation of cells in response to extracellular mediators and to changes in the environment. In general, these kinases fall into several groups; those which preferentially catalyse the phosphorylation of hydroxy groups of serine and/or threonine residues and those which preferentially catalyse the phosphorylation of hydroxy groups of tyrosine residues [S.K.Hanks and  
15 T.Hunter, FASEB. J., 1995, 9, pages 576-596]. Such phosphorylations may greatly modify the function of the proteins; thus, protein kinases play an important role in regulating a wide variety of cell processes including, especially, metabolism, cell proliferation, cell differentiation or cell survival.

20 Among the various cellular functions in which the activity of a kinase protein is involved, certain processes represent attractive targets for treating certain diseases. As an example, mention may be made especially of angiogenesis and the control of the cell cycle, in which kinase proteins can play an essential role. These processes are essential for the growth of solid tumours and also for other diseases.

25 Angiogenesis or the formation of new blood vessels by sprouting from the preexisting vasculature is of central importance for embryonic development and organogenesis. Should the need arise, the vascular system has the potential to generate a network of new vessels so as to maintain the correct functioning of the tissues and organs. Angiogenesis is a complex multistage process which includes activation, migration, proliferation and survival of endothelial cells. In adults, angiogenesis is fairly limited, appearing mainly only in the processes of repair after an injury or of vascularization of the  
30 endometrium. (Merenmies et al., Cell Growth & Differentiation, 8, 3-10, 1997). However, uncontrolled angiogenesis is found in certain pathologies such as retinopathy, psoriasis, rheumatoid arthritis, diabetes, muscle degeneration or cancer (solid tumours) (Folkman, Nature Med., 1, 27-31, 1995). The kinase proteins whose involvement it has been possible to demonstrate in the angiogenesis process include three members of the family of growth factor receptor tyrosine kinases: VEGF-R2 (vascular  
35 endothelial growth factor receptor 2, also known as KDR, kinase insert domain receptor, or FLK-1), FGF-R (fibroblast growth factor receptor) and TEK (also known as Tie-2).

In conjunction with other systems, the Vascular Endothelial Growth Factor receptors (VEGFRs) transmit signals involved in the migration, proliferation and survival of endothelial cells. The family VEGFR includes VEGFR-1 (Flt-1), VEGFR-2 (KDR) and VEGFR3 (Flt4). The receptor VEGF-R2, which is expressed only in the endothelial cells, binds to the angiogenic growth factor VEGF, and thus serves as a transduction signal mediator via the activation of its intracellular kinase domain. Thus, the direct inhibition of the kinase activity of VEGF-R2 makes it possible to reduce the phenomenon of angiogenesis in the presence of exogenous VEGF (Strawn et al., Cancer Research, 56, 3540-3545, 1996), this process being demonstrated especially with the aid of VEGF-R2 mutants (Millauer et al., Cancer Research, 56, 1615-1620, 1996). The VEGF-R2 receptor appears to have no other function in adults than that associated with the angiogenic activity of VEGF. Thus, a selective inhibitor of the kinase activity of VEGF-R2 should show only little toxicity.

In addition to this central role in the dynamic angiogenic process, recent results suggest that the expression of VEGF contributes towards the survival of tumoral cells after chemotherapy and radiotherapy, underlining the potential synergism of KDR inhibitors with other agents (Lee C.G., Heijn M. et al., (2000), Cancer Research, 60 (19), 5565-70). The KDR inhibitors thus especially constitute anti-angiogenic agents and such agents might be used as a first line treatment against the emergence or regrowth of malignant tumours. The inhibition or regulation of VEGFR-2 (KDR) thus provides a powerful new mechanism of action for the treatment of a large number of solid tumours.

Extensive studies in the field of tumor angiogenesis in the past two decades have identified a number of therapeutic targets including kinases, proteases and integrins resulting in the discovery of many new anti-angiogenic agents, including KDR inhibitors some of which are currently under clinical evaluation (Jekunen, et al Cancer Treatment Rev. 1997 , 23, pages 263-286.).

The present patent application thus relates particularly to novel inhibitors of the VEGFR-2 (KDR) receptor that may be used especially for anti-angiogenic treatment in oncology.

The protein kinases which preferentially catalyse the phosphorylation of hydroxy groups of serine and/or threonine residues include for example, protein kinase C isoforms [A.C.Newton, J. Biol. Chem., 1995, 270, pages 28495-28498] and a group of cyclin-dependent kinases such as cdk2 [J.Pines, Trends in Biochemical Sciences, 1995, 18, pages 195-197]. The protein kinases which preferentially catalyse the phosphorylation of hydroxy groups of serine and/or threonine residues include membrane-spanning growth factor receptors such as the epidermal growth factor receptor [S.Iwashita and M.Kobayashi,

Cellular Signalling, 1992, 4, pages 123-132], and cytosolic non-receptor kinases such as p56lck, p59fyn, ZAP-70 and csk kinases [C.Chan et. al., Ann. Rev. Immunol., 1994, 12, pages 555-592].

Inappropriately high protein kinase activity has been implicated in many diseases resulting from abnormal cellular function. This might arise either directly or indirectly, for example by failure of the proper control mechanisms for the kinase, related for example to mutation, over-expression or inappropriate activation of the enzyme; or by over- or underproduction of cytokines or growth factors also participating in the transduction of signals upstream or downstream of the kinase. In all of these instances, selective inhibition of the action of the kinase might be expected to have a beneficial effect.

SYK (Spleen Tyrosine Kinase) is a 72-kDa cytoplasmic protein tyrosine kinase that is expressed in a variety of hematopoietic cells and is an essential element in several cascades that couple antigen receptors to cellular responses. Thus, SYK plays a pivotal role in signalling of the high affinity IgE receptor, FcεR1, in mast cells and in receptor antigen signalling in T and B lymphocytes. The signal transduction pathways present in mast, T and B cells have common features. The ligand binding domain of the receptor lacks intrinsic tyrosine kinase activity. However, they interact with transducing subunits that contain immunoreceptor tyrosine based activation motifs (ITAMs) [M.Reth, Nature, 1989, 338, pages 383-384]. These motifs are present in both the β and γ subunits of the FcεR1, in the ξ-subunit of the T cell receptor (TCR) and in the IgGα and IgG β subunits of the B cell receptor (BCR). [N.S.van Oers and A.Weiss, Seminars in Immunology, 1995, 7, pages 227-236] Upon binding of antigen and multimerization, the ITAM residues are phosphorylated by protein tyrosine kinases of the Src family. SYK belongs to a unique class of tyrosine kinases that have two tandem Src homology 2 (SH2) domains and a C terminal catalytic domain. These SH2 domains bind with high affinity to ITAMs and this SH2-mediated association of SYK with an activated receptor stimulates SYK kinase activity and localises SYK to the plasma membrane.

In SYK deficient mice, mast cell degranulation is inhibited, suggesting that this is an important target for the development of mast cell stabilising agents [P.S.Costello, Oncogene, 1996, 13, pages 2595-2605]. Similar studies have demonstrated a critical role for SYK in BCR and TCR signalling [A.M.Cheng, Nature, 1995, 378, pages 303-306, (1995) and D.H.Chu et al., Immunological Reviews, 1998, 165, pages 167-180]. SYK also appears to be involved in eosinophil survival in response to IL-5 and GM-CSF [S.Yousefi et al., J. Exp. Med., 1996, 183, pages 1407-1414]. Despite the key role of SYK in mast cell, BCR and T cell signalling, little is known about the mechanism by which SYK transmits downstream effectors. Two adaptor proteins, BLNK (B cell Linker protein, SLP-65) and SLP-76 have been shown to be substrates of SYK in B cells and mast cells respectively and have been postulated to interface SYK with downstream effectors [M.Ishiai et al., Immunity, 1999, 10, pages 117-

125 and L.R.Hendricks-Taylor et al., J.Biol. Chem, 1997, 272, pages 1363-1367]. In addition SYK appears to play an important role in the CD40 signalling pathway, which plays an important role in B cell proliferation [M.Faris et al., J.Exp. Med., 1994, 179, pages 1923-1931].

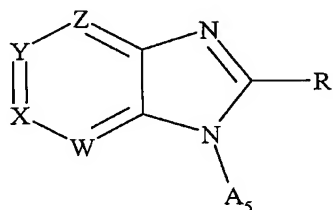
- 5 SYK is further involved in the activation of platelets stimulated via the low-affinity IgG receptor (Fc gamma-RIIA) or stimulated by collagen [F.Yanaga et al., Biochem. J., 1995, 311, (Pt. 2) pages 471-478].

- ITK, is a T cell specific tyrosine kinase of the Tec family that is required for normal Th2 function.  
10 Asthma is a disease characterised by increased Th2 cytokine production including IL-4. An inhibitor of ITK should therefore have an impact on disease progression in asthma through inhibition of Th2 cytokine production.

- We have now found a novel group of benzimidazoles, which have valuable pharmaceutical properties,  
15 in particular, the ability to inhibit protein kinases, more particularly, the ability to inhibit the protein kinase SYK, the protein kinase KDR, the protein kinase tie2 or the protein kinase ITK.

Thus, in one aspect, the present invention is directed to pharmaceutical compositions comprising compounds of general formula (Ix):-

20



(Ix)

wherein, for the purposes of (Ix):-

- X represents C-R<sup>2</sup> and W, Y and Z, which may be identical or different, represent CH or CR<sup>3</sup>; or  
25 W represents CH, X represents N, Y represents CH or CR<sup>3</sup>, and Z represents CH or CR<sup>3</sup>; or  
W represents N, X represents CH or CR<sup>2</sup>, Y represents CH and CR<sup>3</sup>, and Z represents CH or CR<sup>3</sup>; or  
W represents N, X represents CH or CR<sup>2</sup>, Y represents N, and Z is CH or CR<sup>3</sup>; or  
W represents N, X represents CH or CR<sup>2</sup>, Y represents CH or CR<sup>3</sup>, and Z represents N; or  
W represents N, X represents N, Y represents CH or CR<sup>3</sup>, and Z represents CH or CR<sup>3</sup>;  
30 A₅ represents H or alkyl;

$R^1$  represents aryl or heteroaryl, each optionally substituted by one or more groups selected from carboxy, cyano, halo, haloalkyl, hydroxy, nitro,  $R^4$ ,  $-C(=O)R^4$ ,  $-C(=O)NY^1Y^2$ ,  $-C(=O)OR^4$ ,  $-N(R^6)C(=O)R^4$ ,  $-N(R^6)C(=O)NY^1Y^2$ ,  $-N(R^6)C(=O)OR^4$ ,  $-N(R^6)SO_2R^4$ ,  $-N(R^6)SO_2NY^1Y^2$ ,  $-NY^1Y^2$ ,  $-OR^4$ ,  $-OCF_2H$ ,  $-OCF_3$ ,  $-OC(=O)R^4$ ,  $-OC(=O)NY^1Y^2$ ,  $-OS(O)_nR^4$ ,  $-S(O)_nR^4$ ,

5  $-S(O)_nNY^1Y^2$  and  $-S(O)_nOR^4$ ;

$R^2$  and  $R^3$  are such that:

$R^2$  and  $R^3$ , which may be identical or different, represent H, carboxy, cyano, halo, haloalkyl, hydroxy, nitro,  $R^4$ ,  $-C(=O)R^4$ ,  $-C(=O)NY^1Y^2$ ,  $-C(=O)OR^4$ ,  $-NY^1Y^2$ ,  $-N(R^6)C(=O)R^4$ ,  $-N(R^6)C(=O)NY^1Y^2$ ,  $-N(R^6)C(=O)OR^4$ ,  $-N(R^6)SO_2R^4$ ,  $-N(R^6)SO_2NY^1Y^2$ ,  $-OR^4$ ,  $-OCF_2H$ ,  $-OCF_3$ ,  $-OC(=O)R^4$ ,

10  $-OC(=O)NY^1Y^2$ ,  $-S(O)_nR^4$ ,  $-S(O)_nNY^1Y^2$  or  $-S(O)_nOR^4$ ; or

$R^2$  represents H, carboxy, cyano, halo, haloalkyl, hydroxy, nitro,  $R^4$ ,  $-C(=O)R^4$ ,  $-C(=O)NY^1Y^2$ ,  $-C(=O)OR^4$ ,  $-NY^1Y^2$ ,  $-N(R^6)C(=O)R^4$ ,  $-N(R^6)C(=O)NY^1Y^2$ ,  $-N(R^6)C(=O)OR^4$ ,  $-N(R^6)SO_2R^4$ ,  $-N(R^6)SO_2NY^1Y^2$ ,  $-OR^4$ ,  $-OCF_2H$ ,  $-OCF_3$ ,  $-OC(=O)R^4$ ,  $-OC(=O)NY^1Y^2$ ,  $-S(O)_nR^4$ ,  $-S(O)_nNY^1Y^2$  or  $-S(O)_nOR^4$  and  $R^3$  represents alkyl, haloalkyl, halogen and  $OR^6$ ; or

15  $R^2$  and  $R^3$  groups on adjacent carbon atoms may form a 5- to 6-membered carbon-based ring containing one or more heteroatoms, which may be identical or different, chosen from O, N and S, and which may be optionally substituted by alkyl [examples include those where  $R^2$  and  $R^3$  form a group selected from  $-O-CH_2-O-$ ,  $-O-CH_2-CH_2-O-$ ,  $-CH_2-O-CH_2-$ ,  $-CH_2-N(R^{14})-CH_2-$ ,  $-CH_2-CH_2-CH_2-$ ,  $-CH_2-C(CH_3)_2-CH_2-$ ,  $-CH_2-O-CH_2-CH_2-$ ,  $-CH_2-N(R^{14})-CH_2-CH_2-$ ,  $-CH_2-CH_2-CH_2-CH_2-$ ,  $-CH_2-C(CH_3)_2-CH_2-CH_2-$ ,  $-CH=CH-CH=CH-$ ,  $-N=CH-CH=CH-$ ,  $-CH=N-CH=CH-$ ,  $-CH=CH-N=CH-$  or  $-CH=CH-CH=N$ , in which  $R^{14}$  is H or alkyl)];

$R^4$  is alkyl, alkenyl, alkynyl, cycloalkyl, heterocycloalkyl, aryl or heteroaryl, each optionally substituted with one or more substituents selected from alkyl, aryl, cycloalkyl, heteroaryl, heterocycloalkyl, halo, hydroxy, hydroxyalkyl,  $-C(=O)NY^3Y^4$ ,  $-C(=O)OR^6$ ,  $-N(R^6)C(=O)NY^1Y^2$ ,

25  $-NY^1Y^2$ ,  $-OR^5$  or alkyl substituted by  $-NY^3Y^4$ ;

$R^5$  is alkyl, alkenyl, aryl, arylalkyl, cycloalkyl, cycloalkylalkyl, heteroaryl, heteroarylalkyl, heterocycloalkyl or heterocycloalkylalkyl;

$R^6$  is chosen from the values of  $R^5$ ;

$n$  is zero or an integer 1 or 2;

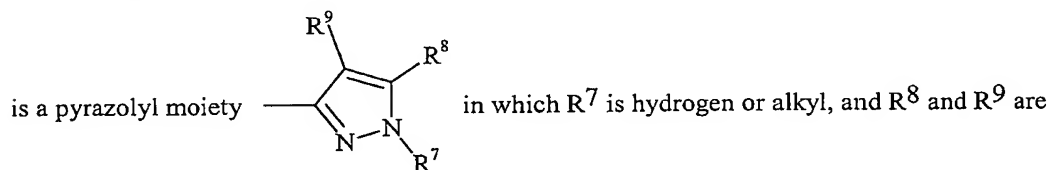
30  $Y^1$  and  $Y^2$  are independently hydrogen, alkenyl, aryl, cycloalkyl, heteroaryl, heterocycloalkyl, heterocycloalkylalkyl or alkyl optionally substituted by one or more groups selected from cyano, aryl,

heteroaryl, hydroxy,  $-C(=O)OR^6$ ,  $-C(=O)NY^3Y^4$ ,  $-NY^3Y^4$  or  $-OR^5$ , or the group  $-NY^1Y^2$  may form a cyclic amine;

$Y^3$  and  $Y^4$  are independently hydrogen, alkenyl, alkyl, aryl, arylalkyl, cycloalkyl, heteroaryl or heteroarylalkyl; or the group  $-NY^3Y^4$  may form a cyclic amine;

- 5 all the alkyl (or alk, which represents alkyl), alkenyl, cycloalkyl, heterocycloalkyl, aryl, arylalkyl, heteroaryl and heteroarylalkyl radicals present in the above radicals furthermore being optionally substituted with one or more radicals chosen from halogen atoms and hydroxyl, cyano, alkyl, alkoxy, acylamino ( $NH-COalk$ ),  $-C(=O)OR^6$ ,  $-C(=O)R^6$ , hydroxyalkyl, carboxyalkyl,  $S(O)_n-alk$ ,  $S(O)_n-NH_2$ ,  $S(O)_n-NH(alk)$ ,  $S(O)_n-N(alk)_2$ ,  $CF_3$ ,  $OCF_3$ ,  $NO_2$ , arylalkoxy, aryl, heteroaryl, aryloxy, aryloxyalkyl,
- 10  $-C(=O)-NY^3Y^4$  and  $NY^3Y^4$  radicals, the latter radicals containing alkyl, aryl and heteroaryl being themselves optionally substituted with one or more radicals chosen from halogen atoms and alkyl radicals, free, salified or esterified carboxyl radicals and acylamino radicals  $NH-C(O)R^5$ ; and their corresponding N-oxides, and their prodrugs, and their acid bioisosteres; and pharmaceutically acceptable salts and solvates (e.g. hydrates) of such compounds and their N-oxides and their prodrugs,
- 15 and their acid bioisosteres; together with one or more pharmaceutically acceptable carriers or excipients.

In another aspect, the invention concerns the compounds of formula (Ix) as defined above wherein  $R^1$



- 20 independently selected from hydrogen, carboxy, cyano, halo, haloalkyl, hydroxy, nitro,  $R^4$ ,  $-C(=O)R^4$ ,  $-C(=O)NY^1Y^2$ ,  $-C(=O)OR^4$ ,  $-N(R^6)C(=O)R^4$ ,  $-N(R^6)C(=O)NY^1Y^2$ ,  $-N(R^6)C(=O)OR^4$ ,  $-N(R^6)SO_2R^4$ ,  $-N(R^6)SO_2NY^1Y^2$ ,  $-NY^1Y^2$ ,  $-OR^4$ ,  $-OC(=O)R^4$ ,  $-OC(=O)NY^1Y^2$ ,  $-S(O)_nR^4$  and  $-S(O)_2NY^1Y^2$ ; or  $R^8$  and  $R^9$  together with the carbon atoms to which they are attached form (i) a 5 to 8 membered carbocyclic ring optionally substituted by one or more carbocyclic ring substituents; (ii) a
- 25 phenyl ring optionally substituted by one or more aryl group substituents; (iii) a 5 or 6 membered heteroaromatic ring in which one or more of the ring members is/are nitrogen, oxygen or sulfur (examples of such groups include furyl, imidazolyl, isoxazolyl, isothiazolyl, oxadiazolyl, pyrazinyl, pyridazinyl, pyrazolyl, pyridyl, pyrimidinyl, pyrrolyl, 1,3,4-thiadiazolyl, thiazolyl, thienyl and triazolyl groups) and which is optionally substituted by one or more groups selected from haloalkyl, hydroxy,
- 30 halo, cyano, nitro,  $R^4$ ,  $-C(=O)NY^1Y^2$ ,  $-N(R^6)C(=O)R^4$ ,  $-N(R^6)C(=O)NY^1Y^2$ ,  $-N(R^6)SO_2R^4$ ,

-NY<sup>1</sup>Y<sup>2</sup> and -OR<sup>5</sup>; or (iv) a 5 or 6 membered heterocyclic ring optionally substituted by alkyl or oxo, and containing a heteroatom-containing group selected from O, S, SO<sub>2</sub>, or NY<sup>5</sup> (where Y<sup>5</sup> is hydrogen, R<sup>4</sup>, -C(=O)R<sup>4</sup>, -C(=O)NY<sup>1</sup>Y<sup>2</sup>, -C(=O)OR<sup>4</sup> or -SO<sub>2</sub>R<sup>4</sup>); but excluding the compounds:

2-(2H-pyrazol-3-yl)-1H-benzimidazole; 2-(5-methyl-2H-pyrazol-3-yl)-1H-benzimidazole; 5-methyl-6-[2-(2H-pyrazol-3-yl)-3H-benzimidazol-5-yl]-4,5-dihydro-2H-pyridazin-3-one; 5-methyl-6-[2-(2H-pyrazol-3-yl)-1H-benzimidazol-4-yl]-4,5-dihydro-2H-pyridazin-3-one; 3,5-bis(benzimidazol-2-yl)-1H-pyrazole; 5,6-dimethyl-2-(5-methyl-1H-pyrazol-3-yl)-1H-benzimidazole; 6-methyl-2-(5-methyl-1H-pyrazol-3-yl)-1H-benzimidazole; 5,6-dichloro-2-(5-methyl-1H-pyrazol-3-yl)-1H-benzimidazole; 5-nitro-2-(5-methyl-1H-pyrazol-3-yl)-1H-benzimidazole; 2-(5-methyl-1H-pyrazol-3-yl)-1H-benzimidazole-5-carboxylic acid; 2-(5-phenyl-1H-pyrazol-3-yl)-1H-benzimidazole; 5,6-dimethyl-2-(5-phenyl-1H-pyrazol-3-yl)-1H-benzimidazole; 5-methyl-2-(5-phenyl-1H-pyrazol-3-yl)-1H-benzimidazole; 6-chloro-2-(5-methyl-1H-pyrazol-3-yl)-1H-benzimidazole; 5-chloro-2-(5-phenyl-1H-pyrazol-3-yl)-1H-benzimidazole; 5,6-dichloro-2-(5-phenyl-1H-pyrazol-3-yl)-1H-benzimidazole; N-[2-(5-isoquinolin-4-yl)-1H-indazol-3-yl]-3H-benzimidazol-5-yl]-methanesulfonamide; 3-(1H-benzimidazol-2-yl)-5-(1H-indazol-4-yl)-1H-indazole, 3-[3-(1H-benzimidazol-2-yl)-1H-indazol-5-yl]-2-methoxyphenol; 4-[3-(1H-benzimidazol-2-yl)-1H-indazol-5-yl]isoquinoline; 4-[3-[6-(4-methyl-piperazin-1-yl)-1H-benzimidazol-2-yl]-1H-indazol-5-yl]-isoquinoline; 4-[3-(4-chloro-1H-benzimidazol-2-yl)-1H-indazol-5-yl]-isoquinoline; 4-[2-(1H-indazol-3-yl)-1H-benzimidazol-5-yl]-phenol; 3-[5-(4-methoxy-phenyl)-1H-benzimidazol-2-yl]-1H-indazole; 3-[5-(4-methoxy-phenyl)-1H-benzimidazol-2-yl]-1H-indazole; 3-[5-(3-methoxy-phenyl)-1H-benzimidazol-2-yl]-1H-indazole; 3-(1H-benzimidazol-2-yl)-5-phenyl-1H-indazole; 2-(4-bromo-1-methyl-1H-pyrazol-3-yl)-1H-benzimidazole; 2-(5-*tert*-butyl-1H-pyrazol-3-yl)-1H-benzimidazole; 3-(1H-benzimidazol-2-yl)-6-(3-methoxy-phenyl)-1H-indazole; 3-(1H-benzimidazol-2-yl)-1H-indazole-6-carboxylic acid; 5-[[3-(1H-benzimidazol-2-yl)-1H-indazole-6-carbonyl]-amino]-2-hydroxy-benzoic acid methyl ester; 5-[[3-(1H-benzimidazol-2-yl)-1H-indazole-6-carbonyl]-amino]-furan-2-carboxylic acid methyl ester; 3-(1H-benzimidazol-2-yl)-1H-indazole-6-carboxylic acid (3-hydroxy-4-methoxy-phenyl)-amide; 3-(1H-benzimidazol-2-yl)-1H-indazole-6-carboxylic acid (5-hydroxy-1H-pyrazol-3-yl)-amide; 3-(1H-benzimidazol-2-yl)-1H-indazole-6-carboxylic acid (1H-pyrazol-3-yl)-amide; [3-(1H-benzimidazol-2-yl)-1H-indazol-6-yl]-[4-(2-hydroxy-ethyl)-piperidin-1-yl]-methanone; 3-(1H-benzimidazol-2-yl)-1H-indazole-6-carboxylic acid (9H-purin-6-yl)-amide; 3-(1H-benzimidazol-2-yl)-1H-indazole-6-carboxylic acid dimethylamide; [3-(1H-benzimidazol-2-yl)-1H-indazol-6-yl]-morpholin-4-yl-methanone; 3-(1H-benzimidazol-2-yl)-1H-indazole-6-carboxylic acid pyrazin-2-ylamide; 3-(1H-benzimidazol-2-yl)-1H-indazole-6-carboxylic acid cyclohexylamide; 3-(1H-benzimidazol-2-yl)-1H-indazole-6-carboxylic acid (1H-indazol-5-yl)-amide; [3-(1H-benzimidazol-2-yl)-1H-indazol-6-yl]-pyrrolidin-1-yl-methanone; 3-(1H-benzimidazol-2-yl)-1H-indazole-6-carboxylic

acid (1H-indazol-5-yl)-amide; [3-(1H-benzoimidazol-2-yl)-1H-indazol-6-yl]-[4-(furan-2-carbonyl)-piperazin-1-yl]-methanone; [3-(1H-benzoimidazol-2-yl)-1H-indazol-6-yl]-(4-methyl-piperazin-1-yl)-methanone; 1-{4-[3-(1H-benzoimidazol-2-yl)-1H-indazole-6-carbonyl]-piperazin-1-yl}-ethanone; 3-(1H-benzoimidazol-2-yl)-1H-indazole-6-carboxylic acid (6-methoxy-pyridin-3-yl)-amide; 3-(1H-benzoimidazol-2-yl)-1H-indazole-6-carboxylic acid (3-hydroxy-phenyl)-amide; 3-(1H-benzoimidazol-2-yl)-1H-indazole-6-carboxylic acid pyridin-4-ylamide; 3-(1H-benzoimidazol-2-yl)-1H-indazole-6-carboxylic acid (2-morpholin-4-yl-ethyl)-amide; 3-(1H-benzoimidazol-2-yl)-1H-indazole-6-carboxylic acid (2-hydroxy-ethyl)-methyl-amide; 3-[[3-(1H-benzoimidazol-2-yl)-1H-indazole-6-carbonyl]-amino]-butyric acid ethyl ester; 3-(1H-benzoimidazol-2-yl)-1H-indazole-6-carboxylic acid (3-hydroxy-propyl)-amide; 3-(1H-benzoimidazol-2-yl)-1H-indazole-6-carboxylic acid phenylamide; 3-(1H-benzoimidazol-2-yl)-1H-indazole-6-carboxylic acid pyridin-3-ylamide; 3-(6-methoxy-1H-benzoimidazol-2-yl)-1H-indazole-6-carboxylic acid (4-hydroxy-phenyl)-amide; 3-(1H-benzoimidazol-2-yl)-6-pyridin-4-yl-1H-indazole; 3-(5-chloro-1H-benzoimidazol-2-yl)-1H-indazole-6-carboxylic acid (4-hydroxy-phenyl)-amide; 3-(5,6-dimethoxy-1H-benzoimidazol-2-yl)-1H-indazole-6-carboxylic acid (4-hydroxy-phenyl)-amide; 3-(5-fluoro-1H-benzoimidazol-2-yl)-1H-indazole-6-carboxylic acid (4-hydroxy-phenyl)-amide; 3-(6-trifluoromethyl-1H-benzoimidazol-2-yl)-1H-indazole-6-carboxylic acid (4-hydroxy-phenyl)-amide; 3-(6-*tert*-butyl-1H-benzoimidazol-2-yl)-1H-indazole-6-carboxylic acid (4-hydroxy-phenyl)-amide; 3-(6,7-dimethyl-1H-benzoimidazol-2-yl)-1H-indazole-6-carboxylic acid (4-hydroxy-phenyl)-amide; 3-(5,6-dichloro-1H-benzoimidazol-2-yl)-1H-indazole-6-carboxylic acid (4-hydroxy-phenyl)-amide; 3-(5,6-difluoro-1H-benzoimidazol-2-yl)-1H-indazole-6-carboxylic acid (4-hydroxy-phenyl)-amide; 3-(1H-benzoimidazol-2-yl)-1H-indazole-6-carboxylic acid (3-fluoro-4-hydroxy-phenyl)-amide; 3-(1H-benzoimidazol-2-yl)-1H-indazole-6-carboxylic acid amide; 3-(1H-benzoimidazol-2-yl)-1H-indazole-6-carboxylic acid (4-hydroxy-2,3-dimethyl-phenyl)-amide; 3-(1H-benzoimidazol-2-yl)-1H-indazole-6-carboxylic acid (4-hydroxy-2-methyl-phenyl)-amide; 3-(1H-benzoimidazol-2-yl)-1H-indazole-6-carboxylic acid (4-hydroxy-phenyl)-amide; 3-(1H-benzoimidazol-2-yl)-1H-indazole-6-carboxylic acid cyclopropylamide; 2-[6-(4-hydroxy-2-methoxy-phenyl)-1H-indazol-3-yl]-3H-benzoimidazole-5-sulfonic acid amide; 4-[3-(6-dimethylamino-1H-benzoimidazol-2-yl)-1H-indazol-6-yl]-3-methoxy-phenol; 2-[6-(4-hydroxy-2-methoxy-phenyl)-1H-indazol-3-yl]-3H-benzoimidazole-5-carboxylic acid methylamide; 3-methoxy-4-{3-[6-(4-methyl-piperazin-1-yl)-1H-benzoimidazol-2-yl]-1H-indazol-6-yl}-phenol; 2-[6-(4-hydroxy-2-methoxy-phenyl)-1H-indazol-3-yl]-3H-benzoimidazole-5-carboxylic acid (2-morpholin-4-yl-ethyl)-amide; 4-[3-(1H-imidazo[4,5-c]pyridin-2-yl)-1H-indazol-6-yl]-3-methoxy-phenol; 3-[3-(1H-benzoimidazol-2-yl)-1H-indazol-6-yl]-2-methoxy-phenol; 3-[3-(1H-benzoimidazol-2-yl)-1H-indazol-6-yl]-phenol; 4-[3-(1H-benzoimidazol-2-yl)-1H-indazol-6-yl]-3,5-dimethyl-phenol; 4-[3-(1H-benzoimidazol-2-yl)-1H-indazol-6-yl]-3-phenoxy-phenol; 4-[3-(1H-benzoimidazol-2-yl)-1H-indazol-6-yl]-benzene-1,3-diol; 4-[3-(1H-benzoimidazol-2-yl)-1H-indazol-6-yl]-3-methoxy-phenol; 4-[3-(1H-benzoimidazol-2-yl)-1H-indazol-6-yl]-2-methoxy-phenol;



N-{3-[3-(1H-benzoimidazol-2-yl)-1H-indazole-6-carbonyl]-phenyl}-benzamide; 6-[2-(1,5-dimethyl-1H-pyrazol-3-yl)-3H-benzoimidazol-5-yl]-5-methyl-4,5-dihydro-2H-pyridazin-3-one; 5-methyl-6-[2-(1-methyl-1H-pyrazol-3-yl)-3H-benzoimidazol-5-yl]-4,5-dihydro-2H-pyridazin-3-one; 8-(1,5-dimethyl-1H-pyrazol-3-yl)-7H-purine; 2-(1,5-dimethyl-1H-pyrazol-3-yl)-1H-imidazo[4,5-b]pyridine and 2-(5-methyl-1H-pyrazol-3-yl)-1H-imidazo[4,5-b]pyridine.

In the present specification, the term "compounds of the invention", and equivalent expressions, are meant to embrace compounds of general formula (Ix) as hereinbefore described, which expression includes the prodrugs, the pharmaceutically acceptable salts, and the solvates, e.g. hydrates, where the context so permits. Similarly, reference to intermediates, whether or not they themselves are claimed, is meant to embrace their salts, and solvates, where the context so permits. For the sake of clarity, particular instances when the context so permits are sometimes indicated in the text, but these instances are purely illustrative and it is not intended to exclude other instances when the context so permits.

As used above for compounds of formula (Ix), and throughout the description of the invention hereinafter, the following terms unless otherwise indicated, shall be understood to have the following meanings:-

"Patient" includes both human and other mammals.

"Acid bioisostere" means a group which has chemical and physical similarities producing broadly similar biological properties to a carboxy group (see Lipinski, Annual Reports in Medicinal Chemistry, 1986,21,p283 "Bioisosterism In Drug Design"; Yun, Hwahak Sekye, 1993, 33, pages 576-579 "Application Of Bioisosterism To New Drug Design"; Zhao, Huaxue Tongbao, 1995, pages 34-38 "Bioisosteric Replacement And Development Of Lead Compounds In Drug Design"; Graham, Theochem, 1995, 343, pages 105-109 "Theoretical Studies Applied To Drug Design: ab initio Electronic Distributions In Bioisosteres"). Examples of suitable acid bioisosteres include: -C(=O)-NHOH, -C(=O)-CH<sub>2</sub>OH, -C(=O)-CH<sub>2</sub>SH, -C(=O)-NH-CN, sulfo, phosphono, alkylsulfonylcarbonyl, tetrazolyl, arylsulfonylcarbonyl, heteroarylsulfonylcarbonyl, N-methoxycarbonyl, 3-hydroxy-3-cyclobutene-1,2-dione, 3,5-dioxo-1,2,4-oxadiazolidinyl or heterocyclic phenols such as 3-hydroxyisoxazolyl and 3-hydroxy-1-methylpyrazolyl.

"Acyl" denotes a radical R-C(=O)- in which R represents a radical chosen from a hydrogen atom, linear or branched alkyl radicals containing not more than 6 carbon atoms; optionally substituted amino; aryl, heteroaryl, cycloalkyl or heterocycloalkyl radicals, for example phenyl or pyrrolidinyl

radicals: the term "acyl" thus especially denotes, for example, formyl radicals and acetyl, propionyl, butanoyl, pentanoyl, hexanoyl, benzoyl and pyrrolidinylcarbonyl radicals.

"Acylamino" denotes  $-C(=O)-NH_2$ ,  $-C(O)-NH(alk)$  and  $-C(O)-N(alk)(alk)$  radicals: in these radicals,

5  $NH(alk)$  and  $N(alk)(alk)$  have the meanings given hereinafter defined.

"Alkenyl" means an aliphatic hydrocarbon group containing a carbon-carbon double bond and which may be straight or branched having about 2 to about 15 carbon atoms in the chain and containing one  
10 or more double bonds. Preferred alkenyl groups have 2 to about 12 carbon atoms in the chain; and more preferably 2 to about 6 carbon atoms (e.g. 2 to 4 carbon atoms) in the chain. "Branched," as used herein and throughout the text, means that one or more lower alkyl groups such as methyl, ethyl or propyl are attached to a linear chain; here a linear alkenyl chain. "Lower alkenyl" means about 2 to  
15 about 4 carbon atoms in the chain, which may be straight or branched. Exemplary alkenyl groups include ethenyl, propenyl, n-butenyl, i-butenyl, 3-methylbut-2-enyl, n-pentenyl, heptenyl, octenyl, cyclohexylbutenyl, decenyl, and 3,7-dimethyl-octa-2,6-dienyl.

"Alkoxy" means an alkyl-O- group in which the alkyl group is as described herein. Exemplary alkoxy groups include difluoromethoxy, methoxy, trifluoromethoxy, ethoxy, n-propoxy, i-propoxy, n-butoxy,  
20 s-butoxy, t-butoxy, pentoxy, hexoxy and heptoxy, and also the linear or branched positional isomers thereof.

"Alkoxycarbonyl" means an alkyl-O-CO- group in which the alkyl group is as described herein. Exemplary alkoxycarbonyl groups include methoxy- and ethoxycarbonyl.

25 "Alkyl" means, unless otherwise specified, an aliphatic hydrocarbon group which may be straight or branched chain having about 1 to about 15 carbon atoms in the chain, optionally substituted by one or more halogen atoms. Particular alkyl groups have from 1 to about 6 carbon atoms. "Lower alkyl" as a group or part of a lower alkoxy, lower alkylthio, lower alkylsulfinyl or lower alkylsulfonyl group  
30 means unless otherwise specified, an aliphatic hydrocarbon group which may be a straight or branched chain having 1 to about 4 carbon atoms in the chain. Exemplary alkyl groups include methyl, ethyl, n-propyl, i-propyl, n-butyl, isobutyl, s-butyl, t-butyl, n-pentyl, 3-pentyl, hexyl, isohexyl, heptyl, octyl, nonyl, decyl and dodecyl, and also the linear or branched positional isomers thereof. Exemplary alkyl groups substituted by one or more halogen atoms include trifluoromethyl, difluoromethyl,  
35 trifluoroethyl and difluoroethyl.

"Alkylene" means an aliphatic bivalent radical derived from a straight or branched alkyl group, in which the alkyl group is as described herein. Exemplary alkylene radicals include methylene, ethylene and trimethylene.

- 5 "Alkylenedioxy" means an -O-alkylene-O- group in which alkylene is as defined above. Exemplary alkylenedioxy groups include methylenedioxy and ethylenedioxy.

"Alkylsulfinyl" means an alkyl-SO- group in which the alkyl group is as previously described. Preferred alkylsulfinyl groups are those in which the alkyl group is C<sub>1-4</sub>alkyl.

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"Alkylsulfonyl" means an alkyl-SO<sub>2</sub>- group in which the alkyl group is as previously described. Preferred alkylsulfonyl groups are those in which the alkyl group is C<sub>1-4</sub>alkyl.

- 15 "Alkylsulfonylcarbamoyl" means an alkyl-SO<sub>2</sub>-NH-C(=O)- group in which the alkyl group is as previously described. Preferred alkylsulfonylcarbamoyl groups are those in which the alkyl group is C<sub>1-4</sub>alkyl.

- 20 "Alkylthio" means an alkyl-S- group in which the alkyl group is as previously described. Exemplary alkylthio groups include methylthio, ethylthio, propylthio, isopropylthio, butylthio, isobutylthio, sec-butylthio, tert-butylthio, pentylthio, isopentylthio, hexylthio, isohexylthio and heptylthio, and also the linear or branched positional isomers thereof. Preferred alkylthio groups have not more than 4 carbon atoms.

- 25 "Alkynyl" means an aliphatic hydrocarbon group containing a carbon-carbon triple bond and which group may be a straight or branched chain having about 2 to about 15 carbon atoms in the chain. Preferred alkynyl groups have 2 to about 12 carbon atoms in the chain; and more preferably 2 to about 6 carbon atoms (e.g. 2 to 4 carbon atoms) in the chain. Exemplary alkynyl groups include ethynyl, propynyl, n-butynyl, i-butynyl, 3-methylbut-2-ynyl, and n-pentynyl.

- 30 "Aroyl" means an aryl-CO- group in which the aryl group is as described herein. Exemplary aroyl groups include benzoyl and 1- and 2-naphthoyl.

"Aroylamino" is an aroyl-NH- group wherein aroyl is as previously defined.

"Aryl" as a group or part of a group denotes: (i) an optionally substituted monocyclic or multicyclic aromatic carbocyclic moiety of about 6 to about 14 carbon atoms, such as phenyl or naphthyl; or (ii) an optionally substituted partially saturated multicyclic aromatic carbocyclic moiety in which a monocyclic aromatic carbocyclic moiety and a cycloalkyl or cycloalkenyl group are fused together to form a cyclic structure, such as a tetrahydronaphthyl, indenyl or indanyl ring. Except where otherwise defined, aryl groups may be substituted with one or more aryl group substituents, which may be the same or different, where "aryl group substituent" includes, for example, acyl, acylamino, alkoxy, alkoxycarbonyl, alkylenedioxy, alkylsulfinyl, alkylsulfonyl, alkylthio, aroyl, aroylamino, aryl, arylalkyloxy, arylalkyloxycarbonyl, arylalkylthio, aryloxy, aryloxycarbonyl, arylsulfinyl, arylsulfonyl, arylthio, carboxy (or an acid bioisostere), cyano, cycloalkyl, halo, heteroaroyl, heteroaryl, heteroarylalkyloxy, heteroaroylamino, heteroaryloxy, heterocycloalkyl, hydroxy, nitro, trifluoromethyl,  $-C(=O)NY^1Y^2$ ,  $-NY^1-C(=O)alkyl$ ,  $-NY^1SO_2alkyl$ ,  $-NY^1Y^2$ ,  $-SO_2NY^1Y^2$  or alkyl, alkenyl or alkynyl each optionally substituted with aryl, cycloalkyl, heteroaryl, hydroxy,  $-C(=O)OR^6$ ,  $-C(=O)NY^1Y^2$ ,  $-NY^1Y^2$  or  $-OR^5$ .

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"Arylalkyl" means an aryl-alkyl- group in which the aryl and alkyl moieties are as previously described. Preferred arylalkyl groups contain a  $C_{1-4}$ alkyl moiety. Exemplary arylalkyl groups include benzyl, 2-phenethyl and naphthalenemethyl.

20 "Arylalkyloxy" means an arylalkyl-O- group in which the arylalkyl group is as previously described. Exemplary arylalkyloxy groups include benzyloxy and 1- or 2-naphthalenemethoxy.

"Arylalkyloxycarbonyl" means an arylalkyl-O-CO- group in which the arylalkyl group is as previously described. An exemplary arylalkyloxycarbonyl group is benzyloxycarbonyl.

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"Arylalkylthio" means an arylalkyl-S- group in which the arylalkyl group is as previously described. An exemplary arylalkylthio group is benzylthio.

30 "Aryloxy" means an aryl-O- group in which the aryl group is as previously described. Exemplary aryloxy groups include phenoxy and naphthoxy, each optionally substituted.

"Aryloxycarbonyl" means an aryl-O-C(=O)- group in which the aryl group is as previously described. Exemplary aryloxycarbonyl groups include phenoxycarbonyl and naphthoxycarbonyl.

35 "Arylsulfinyl" means an aryl-SO- group in which the aryl group is as previously described.

"Arylsulfonyl" means an aryl-SO<sub>2</sub>- group in which the aryl group is as previously described.

"Arylsulfonylcarbamoyl" means an aryl-SO<sub>2</sub>-NH-C(=O)- group in which the aryl group is as  
 5 previously described.

"Arylthio" means an aryl-S- group in which the aryl group is as previously described. Exemplary arylthio groups include phenylthio and naphthylthio.

10 "Carbocyclic" means a saturated ring system comprising carbon atoms.

"Carbocyclic group substituent" includes, for example, acyl, acylamino, alkoxy, alkoxycarbonyl, alkylenedioxy, alkylsulfinyl, alkylsulfonyl, alkylthio, aroyl, aroylamino, aryl, arylalkyloxy, arylalkyloxycarbonyl, arylalkylthio, aryloxy, aryloxycarbonyl, arylsulfinyl, arylsulfonyl, arylthio,  
 15 carboxy (or an acid bioisostere), cyano, cycloalkyl, halo, heteroaroyl, heteroaryl, heteroarylalkyloxy, heteroaroylamino, heteroaryloxy, heterocycloalkyl, hydroxy, nitro, trifluoromethyl, -C(=O)NY<sup>1</sup>Y<sup>2</sup>, -NY<sup>1</sup>-C(=O)alkyl, -NY<sup>1</sup>SO<sub>2</sub>alkyl, -NY<sup>1</sup>Y<sup>2</sup>, -SO<sub>2</sub>NY<sup>1</sup>Y<sup>2</sup> or alkyl, alkenyl or alkynyl each optionally substituted with aryl, cycloalkyl, heteroaryl, hydroxy, -C(=O)OR<sup>6</sup>, -C(=O)NY<sup>1</sup>Y<sup>2</sup>, -NY<sup>1</sup>Y<sup>2</sup> or -OR<sup>5</sup>.

20 "Cyclic amine" means a 3 to 8 membered monocyclic cycloalkyl ring system wherein one of the ring carbon atoms is replaced by nitrogen and which (i) may also contain a further heteroatom-containing group selected from O, S, SO<sub>2</sub>, or NY<sup>6</sup> (where Y<sup>6</sup> is hydrogen, alkyl, aryl, arylalkyl, -C(=O)R<sup>5</sup>, -C(=O)OR<sup>5</sup>, -C(=O)NY<sup>1</sup>Y<sup>2</sup> or -SO<sub>2</sub>R<sup>5</sup>); and (ii) may be fused to additional aryl (e.g. phenyl), heteroaryl (e.g. pyridyl), heterocycloalkyl or cycloalkyl rings to form a bicyclic or tricyclic ring system.  
 25 Exemplary cyclic amines include pyrrolidine, piperidine, morpholine, piperazine, indoline, pyrindoline, tetrahydroquinoline and the like groups.

"Cycloalkenyl" means a non-aromatic monocyclic or multicyclic ring system containing at least one carbon-carbon double bond and having about 3 to about 10 carbon atoms. Exemplary monocyclic cycloalkenyl rings include cyclopentenyl, cyclohexenyl and cycloheptenyl.  
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"Cycloalkyl" means a saturated monocyclic or bicyclic ring system of about 3 to about 10 carbon atoms, optionally substituted by oxo. Exemplary monocyclic cycloalkyl rings include C<sub>3-8</sub>cycloalkyl rings such as cyclopropyl, cyclopentyl, cyclohexyl and cycloheptyl.

"Cycloalkylalkyl" means a cycloalkyl-alkyl- group in which the cycloalkyl and alkyl moieties are as previously described. Exemplary monocyclic cycloalkylalkyl groups include cyclopropylmethyl, cyclopentylmethyl, cyclohexylmethyl and cycloheptylmethyl.

5 "Halo" or "halogen" means fluoro, chloro, bromo, or iodo. Preferred are fluoro, bromo and chloro.

"Haloalkyl" means an alkyl group having about 1 to about 6 carbon atoms in the chain and substituted by one or more halo atoms. Exemplary haloalkyl groups include trifluoromethyl.

10 "Heteroaroyl" means a heteroaroyl-C(=O)- group in which the heteroaroyl group is as described herein. Exemplary heteroaroyl groups include pyridylcarbonyl.

"Heteroaroylamino" means a heteroaroyl-NH- group in which the heteroaroyl moiety is as previously described.

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"Heteroaryl" as a group or part of a group denotes: (i) an optionally substituted aromatic monocyclic or multicyclic organic moiety of about 5 to about 10 ring members in which one or more of the ring members is/are element(s) other than carbon, for example nitrogen, oxygen or sulfur (examples of such groups include benzoimidazolyl, benzothiazolyl, furyl, imidazolyl, indazolyl, indolyl, indolizynyl, isoxazolyl, isoquinolynyl, isothiazolyl, oxadiazolyl, pyrazinyl, pyridazinyl, pyrazolyl, pyridyl, pyrimidinyl, pyrrolyl, quinazolinyl, quinolynyl, 1,3,4-thiadiazolyl, thiazolyl, thienyl and triazolyl groups, optionally substituted by one or more aryl group substituents as defined above except where otherwise defined); (ii) an optionally substituted partially saturated multicyclic heterocarbo-cyclic moiety in which a monocyclic heteroaromatic moiety and a cycloalkyl, cycloalkenyl or

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heterocycloalkyl group are fused together to form a cyclic structure (examples of such groups include tetrahydro-indazole, tetrahydro-pyrazolopyridine, 5-oxo-1,4,5,6,7,8,9,9a-octahydro-1,2,4,5a-tetra-cyclopenta[a]naphthyl, optionally substituted by one or more "aryl group substituents" as defined above, except where otherwise defined). Optional substituents include one or more "aryl group substituents" as defined above, except where otherwise defined. When R<sup>1</sup> is heteroaryl this may particularly represent pyrazolyl, triazolyl, isoxazolyl, isothiazolyl, thiazolyl, oxazolyl, imidazolyl, pyrrolyl, furanyl, thiophenyl, phenyl, pyridinyl, oxodihydropyridinyl, pyrimidinyl, indolyl, indazolyl, thienopyrazolyl, tetrahydroindazolyl, tetrahydrocyclopentapyrazolyl, dihydrofuro-pyrazolyl, oxodihydropyridazinyl, tetrahydropyrrolopyrazolyl, oxotetrahydropyrrolopyrazolyl, tetrahydropyranopyrazolyl, tetrahydropyridinopyrazolyl, or oxodihydropyridinopyrazolyl.

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"Heteroarylalkyl" means a heteroaryl-alkyl- group in which the heteroaryl and alkyl moieties are as previously described. Preferred heteroarylalkyl groups contain a C<sub>1-4</sub>alkyl moiety. Exemplary heteroarylalkyl groups include pyridylmethyl.

- 5 "Heteroarylalkyloxy" means an heteroarylalkyl-O- group in which the heteroarylalkyl group is as previously described. Exemplary heteroalkyloxy groups include optionally substituted pyridylmethoxy.

"Heteroalkyloxy" means an heteroaryl-O- group in which the heteroaryl group is as previously described. Exemplary heteroalkyloxy groups include optionally substituted pyridyloxy.

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"Heteroarylsulfonylcarbamoyl" means a heteroaryl-SO<sub>2</sub>-NH-C(=O)- group in which the heteroaryl group is as previously described.

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"Heterocycloalkyl" means: (i) a cycloalkyl group of about 3 to 10 ring members which contains one or more heteroatoms or heteroatom-containing groups selected from O, S and N<sup>6</sup> and may be optionally substituted by oxo (examples of such groups include hexahdropyran, pyrrolidinyl, piperidinyl, tetrahydropyran and octahydro-pyrido[1,2-c]pyrimidin-1-one); (ii) a partially saturated multicyclic heterocarbocyclic moiety in which an aryl (or heteroaryl) ring, each optionally substituted by one or more "aryl group substituents," and a heterocycloalkyl group are fused together to form a cyclic structure (examples of such groups include chromanyl, dihydrobenzofuranyl, indolinyl and pyrindolinyl groups).

20

"Heterocycloalkylalkyl" means a heterocycloalkyl-alkyl- group in which the heterocycloalkyl and alkyl moieties are as previously described.

25

"Hydroxyalkyl" means an alkyl group substituted by one or hydroxy groups.

30

"NH(alk)" and "N(alk)(alk)" denote an amino radical substituted, respectively, with one or two alkyl radicals, such alkyl radicals being linear or branched and chosen from alkyl radicals as defined above, preferably containing not more than 4 carbon atoms.

35

"Prodrug" means a compound which is convertible *in vivo* by metabolic means (e.g. by hydrolysis) to a compound of formula (Ix), including N-oxides thereof. For example an ester of a compound of formula (Ix) containing a hydroxy group may be convertible by hydrolysis *in vivo* to the parent molecule. Alternatively, an ester of a compound of formula (Ix) containing a carboxy group may be convertible by hydrolysis *in vivo* to the parent molecule.

Suitable esters of compounds of formula (Ix) containing a hydroxy group are, for example acetates, citrates, lactates, tartrates, malonates, oxalates, salicylates, propionates, succinates, fumarates, maleates, methylene-bis- $\beta$ -hydroxynaphthoates, gentisates, isethionates, di-p-toluoyltartrates, 5 methanesulfonates, ethanesulfonates, benzenesulfonates, p-toluenesulfonates, cyclohexylsulfamates and quinates.

Suitable esters of compounds of formula (Ix) containing a carboxy group are, for example, those described by F.J.Leinweber, Drug Metab. Res., 1987, 18, page 379.

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An especially useful class of esters of compounds of formula (Ix) containing a hydroxy group, may be formed from acid moieties selected from those described by Bundgaard et. al., J. Med. Chem., 1989, 32, pages 2503-2507, and include substituted (aminomethyl)-benzoates, for example 15 dialkylamino-methylbenzoates in which the two alkyl groups may be joined together and/or interrupted by an oxygen atom or by an optionally substituted nitrogen atom, e.g. an alkylated nitrogen atom, more especially (morpholino-methyl)benzoates, e.g. 3- or 4-(morpholinomethyl)-benzoates, and (4-alkylpiperazin-1-yl)benzoates, e.g. 3- or 4-(4-alkylpiperazin-1-yl)benzoates.

20

Where the compound of the invention of formula (Ix) contains a carboxy group, or a sufficiently acidic bioisostere, base addition salts may be formed and are simply a more convenient form for use; in practice, use of the salt form inherently amounts to use of the free acid form. The bases which can be used to prepare the base addition salts include preferably those which produce, when combined with the free acid, pharmaceutically acceptable salts, that is, salts whose cations are non-toxic to the patient in pharmaceutical doses of the salts, so that the beneficial inhibitory effects inherent in the free base 25 are not vitiated by side effects ascribable to the cations. Pharmaceutically acceptable salts, including those derived from alkali and alkaline earth metal salts, within the scope of the invention include those derived from the following bases: sodium hydride, sodium hydroxide, potassium hydroxide, calcium hydroxide, aluminium hydroxide, lithium hydroxide, magnesium hydroxide, zinc hydroxide, ammonia, ethylenediamine, N-methyl-glucamine, lysine, arginine, ornithine, choline, 30 N,N'-dibenzylethylenediamine, chlorprocaine, diethanolamine, procaine, N-benzylphenethylamine, diethylamine, piperazine, tris(hydroxymethyl)aminomethane, tetramethylammonium hydroxide, and the like.

35

Some of the compounds of the present invention of formula (Ix) are basic, and such compounds are useful in the form of the free base or in the form of a pharmaceutically acceptable acid addition salt thereof.

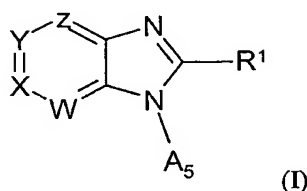


Acid addition salts are a more convenient form for use; and in practice, use of the salt form inherently amounts to use of the free base form. The acids which can be used to prepare the acid addition salts include preferably those which produce, when combined with the free base, pharmaceutically acceptable salts, that is, salts whose anions are non-toxic to the patient in pharmaceutical doses of the salts, so that the beneficial inhibitory effects inherent in the free base are not vitiated by side effects ascribable to the anions. Although pharmaceutically acceptable salts of said basic compounds are preferred, all acid addition salts are useful as sources of the free base form even if the particular salt, per se, is desired only as an intermediate product as, for example, when the salt is formed only for purposes of purification, and identification, or when it is used as intermediate in preparing a pharmaceutically acceptable salt by ion exchange procedures. Pharmaceutically acceptable salts within the scope of the invention include those derived from mineral acids and organic acids, and include hydrohalides, e.g. hydrochlorides and hydrobromides, sulfates, phosphates, nitrates, sulfamates, acetates, citrates, lactates, tartrates, malonates, oxalates, salicylates, propionates, succinates, fumarates, maleates, methylene-bis-b-hydroxynaphthoates, gentisates, isethionates, di-p-toluoyltartrates, methane-sulfonates, ethanesulfonates, benzenesulfonates, p-toluenesulfonates, cyclohexylsulfamates and quinate.

As well as being useful in themselves as active compounds, salts of compounds of the invention of compounds of formula (Ix) are useful for the purposes of purification of the compounds, for example by exploitation of the solubility differences between the salts and the parent compounds, side products and/or starting materials by techniques well known to those skilled in the art.

It will be appreciated that compounds of the present invention of formula (Ix) may contain asymmetric centres. These asymmetric centres may independently be in either the R or S configuration. It will be apparent to those skilled in the art that certain compounds of the invention may also exhibit geometrical isomerism. It is to be understood that the present invention includes individual geometrical isomers and stereoisomers and mixtures thereof, including racemic mixtures, of compounds of formula (Ix) hereinabove. Such isomers can be separated from their mixtures, by the application or adaptation of known methods, for example chromatographic techniques and recrystallisation techniques, or they are separately prepared from the appropriate isomers of their intermediates. Additionally, tautomers of the compounds of formula (Ix) are possible, and the present invention is intended to include all tautomeric forms of the compounds.

One subject of the present invention is thus the compounds of formula (I):



5 in which:

X represents C-R<sup>2</sup> and W, Y and Z, which may be identical or different, represent CH or CR<sup>3</sup>;  
 R<sup>1</sup> represents aryl or heteroaryl chosen from pyrazolyl, triazolyl, imidazolyl, indolyl, indazolyl, thienopyrazolyl, tetrahydroindazolyl, tetrahydrocyclopentapyrazolyl, dihydrofuropyrazolyl, oxodihydropyridazinyl, tetrahydropyrrolopyrazolyl, oxotetrahydropyrrolopyrazolyl,

10 tetrahydropyranopyrazolyl, tetrahydropyridinopyrazolyl, and oxodihydropyridinopyrazolyl radicals, all these radicals being optionally substituted with one or more radicals X<sup>1</sup>, X<sup>2</sup> or X<sup>3</sup> chosen from H, halogen, haloalkyl, OH, R<sup>4</sup>, NO<sub>2</sub>, CN, S(O)<sub>n</sub>R<sup>4</sup>, OR<sup>4</sup>, NY<sup>1</sup>Y<sup>2</sup>, COR<sup>4</sup>, -C(=O)NY<sup>1</sup>Y<sup>2</sup>, -C(=O)OR<sup>4</sup>, -C(=O)OH, -N(R<sup>6</sup>)C(=O)R<sup>4</sup>, -N(R<sup>6</sup>)SO<sub>2</sub>R<sup>4</sup>, -N(R<sup>6</sup>)C(=O)NY<sup>1</sup>Y<sup>2</sup>, -N(R<sup>6</sup>)C(=O)OR<sup>4</sup>, -S(O)<sub>n</sub>OR<sup>4</sup>, -S(O)<sub>n</sub>NY<sup>1</sup>Y<sup>2</sup>, -OC(=O)NY<sup>1</sup>Y<sup>2</sup>, -OS(O)<sub>n</sub>R<sup>4</sup>, -OC(=O)R<sup>4</sup> and optionally substituted thienyl,

15 R<sup>2</sup> and R<sup>3</sup> are such that:

either R<sup>2</sup> and R<sup>3</sup>, which may be identical or different, represent H, R<sup>4</sup>, halogen, haloalkyl, OH, NO<sub>2</sub>, CN, OR<sup>4</sup>, COR<sup>4</sup>, S(O)<sub>n</sub>R<sup>4</sup>, -C(=O)NY<sup>1</sup>Y<sup>2</sup>, -C(=O)OR<sup>4</sup>, -C(=O)OH, -NY<sup>1</sup>Y<sup>2</sup>, -N(R<sup>6</sup>)C(=O)R<sup>4</sup>, -N(R<sup>6</sup>)SO<sub>2</sub>R<sup>4</sup>, -N(R<sup>6</sup>)C(=O)NY<sup>1</sup>Y<sup>2</sup>, -N(R<sup>6</sup>)C(=O)OR<sup>4</sup>, -S(O)<sub>n</sub>OR<sup>4</sup>, -S(O)<sub>n</sub>NY<sup>1</sup>Y<sup>2</sup>, -OC(=O)NY<sup>1</sup>Y<sup>2</sup> and -OC(=O)R<sup>4</sup>

20 or R<sup>2</sup> represents H, R<sup>4</sup>, halogen, haloalkyl, OH, NO<sub>2</sub>, CN, OR<sup>4</sup>, COR<sup>4</sup>, S(O)<sub>n</sub>R<sup>4</sup>, -C(=O)NY<sup>1</sup>Y<sup>2</sup>, -C(=O)OR<sup>4</sup>, -C(=O)OH, -NY<sup>1</sup>Y<sup>2</sup>, -N(R<sup>6</sup>)C(=O)R<sup>4</sup>, -N(R<sup>6</sup>)SO<sub>2</sub>R<sup>4</sup>, -N(R<sup>6</sup>)C(=O)NY<sup>1</sup>Y<sup>2</sup>, -N(R<sup>6</sup>)C(=O)OR<sup>4</sup>, -S(O)<sub>n</sub>OR<sup>4</sup>, -S(O)<sub>n</sub>NY<sup>1</sup>Y<sup>2</sup>, -OC(=O)NY<sup>1</sup>Y<sup>2</sup> and -OC(=O)R<sup>4</sup> and R<sup>3</sup> represents alkyl, haloalkyl, halogen and OR<sup>6</sup>

25 or R<sup>2</sup> and R<sup>3</sup> together form a 5- to 6-membered carbon-based ring containing one or more hetero atoms, which may be identical or different, chosen from O, N and S,

R<sup>4</sup> represents alkyl, alkenyl, alkynyl, cycloalkyl, aryl, heteroaryl, cycloalkylalkyl, heterocycloalkyl, heteroarylalkyl and arylalkyl, all these radicals being optionally substituted with one or more radicals  
 30 chosen from aryl (optionally substituted), halogen, alkyl, hydroxyalkyl, OH, OR<sup>5</sup>, C(=O)NY<sup>3</sup>Y<sup>4</sup>, NY<sup>3</sup>Y<sup>4</sup>, alk-NY<sup>3</sup>Y<sup>4</sup> and C(=O)OR<sup>6</sup>,

R<sup>5</sup> represents alkyl, alkenyl, cycloalkyl, heterocycloalkyl, aryl, heteroaryl, arylalkyl, cycloalkylalkyl, heteroarylalkyl and heterocycloalkylalkyl.

$Y^1$  and  $Y^2$  are such that: either  $Y^1$  and  $Y^2$ , which may be identical or different, represent H and optionally substituted alkyl, alkenyl, cycloalkyl, heterocycloalkyl, heterocycloalkylalkyl, aryl, arylalkyl, heteroaryl and heteroarylalkyl,

5 or  $Y^1$  and  $Y^2$  form, together with the nitrogen atom to which they are attached, a cyclic amino radical,

$Y^3$  and  $Y^4$  are such that: either  $Y^3$  and  $Y^4$ , which may be identical or different, represent hydrogen, alkenyl, alkyl, aryl, arylalkyl, cycloalkyl, heteroaryl or heteroarylalkyl or  $Y^3$  and  $Y^4$  form, together with the nitrogen atom to which they are attached, an optionally substituted cyclic amino radical,

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$A_5$  represents H or alkyl,

$R^6$  is chosen from the values of  $R^5$ ,

all the alkyl (or alk, which represents alkyl), alkenyl, cycloalkyl, heterocycloalkyl, aryl, arylalkyl, heteroaryl and heteroarylalkyl radicals present in the above radicals furthermore being optionally substituted with one or more radicals chosen from halogen atoms and hydroxyl, cyano, alkyl, alkoxy, acylamino (NH-COalk), -C(=O)OR<sup>6</sup>, acyl -C(=O)R<sup>6</sup>, hydroxyalkyl, carboxyalkyl, S(O)<sub>n</sub>-alk, S(O)<sub>n</sub>-NH<sub>2</sub>, S(O)<sub>n</sub>-NH(alk), S(O)<sub>n</sub>-N(alk)<sub>2</sub>, CF<sub>3</sub>, OCF<sub>3</sub>, NO<sub>2</sub>, arylalkoxy, aryl, heteroaryl, aryloxy, aryloxyalkyl, -C(=O)-NY<sup>3</sup>Y<sup>4</sup> and NY<sup>3</sup>Y<sup>4</sup> radicals,

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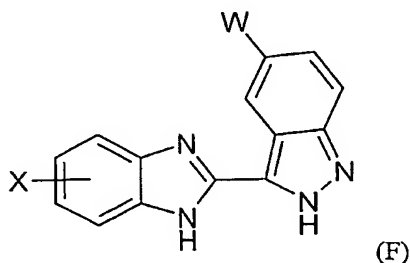
the latter radicals containing alkyl, aryl and heteroaryl being themselves optionally substituted with one or more radicals chosen from halogen atoms and alkyl radicals, free, salified or esterified carboxyl radicals and acylamino radicals NH-C(O)R<sup>5</sup>,

25 the phenyl radicals furthermore being optionally substituted with a dioxole radical,

n represents an integer from 0 to 2,

it being understood that when  $R^1$  represents an indazolyl radical

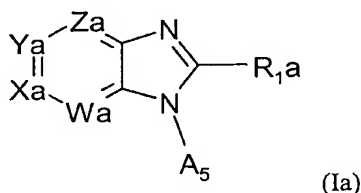
30 to give the compounds of formula (F) below:



with X representing H, R<sup>2</sup> or R<sup>3</sup> as defined above, then W necessarily represents H or unsubstituted alkyl,

- 5 the said compounds of formula (I) being in any possible racemic, enantiomeric or diastereoisomeric isomer form, and also the addition salts with mineral and organic acids or with mineral bases.

One subject of the present invention is thus the compoundss of formula (I) as defined above corresponding to the formula (Ia):



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in which:

- Xa represents C-R<sup>2</sup>a and Wa, Ya and Za, which may be identical or different, represent CH or CR<sup>3</sup>a;  
 R<sub>1</sub>a represents aryl or heteroaryl chosen from pyrazolyl, triazolyl and indazolyl radicals, all these radicals being optionally substituted with one or more radicals X<sup>1</sup>a, X<sup>2</sup>a or X<sup>3</sup>a chosen from H,  
 15 halogen, OH, R<sup>4</sup>a, OR<sup>4</sup>a, NY<sup>1</sup>aY<sup>2</sup>a, S(O)<sub>n</sub>R<sup>4</sup>a, -C(=O)NY<sup>1</sup>aY<sup>2</sup>a, -C(=O)OR<sup>4</sup>a, -N(R<sup>6</sup>a)C(=O)R<sup>4</sup>a, -N(R<sup>6</sup>a)SO<sub>2</sub>R<sup>4</sup>a, -N(R<sup>6</sup>a)C(=O)NY<sup>1</sup>aY<sup>2</sup>a, -N(R<sup>6</sup>a)C(=O)OR<sup>4</sup>a, -OC(=O)NY<sup>1</sup>aY<sup>2</sup>a, -OC(=O)R<sup>4</sup>a, -OS(O)<sub>n</sub>R<sup>4</sup>a and thienyl optionally substituted with an alkyl radical,  
 R<sup>2</sup>a and R<sup>3</sup>a are such that:  
 either R<sup>2</sup>a and R<sup>3</sup>a, which may be identical or different, represent H, R<sup>4</sup>a, halogen, OH, OR<sup>4</sup>a,  
 20 C(=O)NY<sup>1</sup>aY<sup>2</sup>a, -C(=O)OR<sup>4</sup>a and -C(=O)OH, and R<sup>3</sup>a represents alkyl, halogen and OR<sup>6</sup>a,  
 or R<sup>2</sup>a represents H, R<sup>4</sup>a, halogen, OH, OR<sup>4</sup>a, C(=O)NY<sup>1</sup>aY<sup>2</sup>a, -C(=O)OR<sup>4</sup>a and -C(=O)OH, and R<sup>3</sup>a represents alkyl, halogen and OR<sup>6</sup>a,  
 or R<sup>2</sup>a and R<sup>3</sup>a together form an -O-CH<sub>2</sub>-O- or -O-CH<sub>2</sub>-CH<sub>2</sub>-O- ring,  
 R<sup>4</sup>a represents alkyl, alkenyl, cycloalkyl, aryl, heteroaryl, cycloalkylalkyl, heterocycloalkyl,  
 25 heteroarylalkyl and arylalkyl, all these radicals being optionally substituted with one or more radicals chosen from aryl (optionally substituted), halogen, alkyl, hydroxyalkyl, OH, OR<sup>5</sup>a, C(=O)NY<sup>3</sup>aY<sup>4</sup>a, NY<sup>3</sup>aY<sup>4</sup>a, alk-NY<sup>3</sup>aY<sup>4</sup>a and C(=O)OR<sup>6</sup>a,  
 R<sup>5</sup>a represents alkyl, alkenyl, cycloalkyl, heterocycloalkyl, aryl, heteroaryl, arylalkyl, cycloalkylalkyl, heteroarylalkyl and heterocycloalkylalkyl, all these radicals being optionally substituted,  
 30 Y<sup>1</sup>a and Y<sup>2</sup>a are such that: either Y<sup>1</sup>a and Y<sup>2</sup>a, which may be identical or different, represent H, alkyl, alkoxyalkyl, aryloxyalkyl, arylalkyl, heteroarylalkyl, heterocycloalkylalkyl, cycloalkyl, aryl and heteroaryl, all these radicals being optionally substituted, or Y<sup>1</sup>a and Y<sup>2</sup>a form, together with the nitrogen atom to which they are attached, an optionally substituted cyclic amino radical,

$Y^3a$  and  $Y^4a$  are such that: either  $Y^3a$  and  $Y^4a$ , which may be identical or different, represent hydrogen, alkyl, aryl, arylalkyl, cycloalkyl, heteroaryl or heteroarylalkyl,

- 5 or  $Y^3a$  and  $Y^4a$  form, together with the nitrogen atom to which they are attached, a cyclic amino radical,

$A_5$  represents H or alkyl,

- 10 all the alkyl, alkenyl, cycloalkyl, heterocycloalkyl, aryl, arylalkyl, heteroaryl and heteroarylalkyl radicals present in the above radicals furthermore being optionally substituted with one or more radicals chosen from halogen atoms and hydroxyl, cyano, alkyl, alkoxy, acylamino ( $NH-C(O)R^6a$ ),  $-C(=O)OR^6a$ , acyl  $-C(=O)R^6a$ , hydroxyalkyl, carboxyalkyl,  $S(O)_n-alk$ ,  $S(O)_n-NH_2$ ,  $S(O)_n-NH(alk)$ ,  $S(O)_n-N(alk)_2$ ,  $CF_3$ ,  $OCF_3$ ,  $NO_2$ , arylalkoxy, aryl, heteroaryl, aryloxy, aryloxyalkyl,  $-C(=O)-NY^3aY^4a$   
 15 and  $NY^3aY^4a$  radicals,

the latter radicals containing alkyl, aryl and heteroaryl themselves being optionally substituted with one or more radicals chosen from halogen atoms and alkyl radicals, alkoxy radicals, free, salified or esterified carboxyl radicals and acylamino radicals  $NH-C(O)R^6a$ ,

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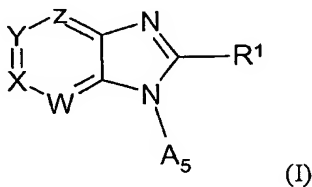
the phenyl radicals furthermore being optionally substituted with a dioxole radical,

$R^6a$  is chosen from the values of  $R^5a$ ,

- 25  $n$  represents an integer from 0 to 2,

the said compounds of formula (Ia) being in any possible racemic, enantiomeric or diastereoisomeric isomer form, and also the addition salts with mineral and organic acids or with mineral bases.

- 30 One subject of the present invention is thus the compounds of formula (I):



in which:

X represents C-R<sup>2</sup> and W, Y and Z, which may be identical or different, represent CH or CR<sup>3</sup>;

R<sup>1</sup> represents aryl or heteroaryl chosen from pyrazolyl, triazolyl, imidazolyl, indolyl, indazolyl, thienopyrazolyl, tetrahydroindazolyl, tetrahydrocyclopentapyrazolyl, dihydrofuropyrazolyl,

- 5 oxodihydropyridazinyl, tetrahydropyrrolopyrazolyl, oxotetrahydropyrrolopyrazolyl, tetrahydropyrano-pyrazolyl, tetrahydropyridinopyrazolyl, and oxodihydro-pyridinopyrazolyl radicals, all these radicals optionally being substituted with one or more radicals X<sup>1</sup>, X<sup>2</sup> or X<sup>3</sup> chosen from H, halogen, haloalkyl, OH, R<sup>4</sup>, NO<sub>2</sub>, CN, S(O)<sub>n</sub>R<sup>4</sup>, OR<sup>4</sup>, NY<sup>1</sup>Y<sup>2</sup>, COR<sup>4</sup>, -C(=O)NY<sup>1</sup>Y<sup>2</sup>, -C(=O)OR<sup>4</sup>, -C(=O)OH, -N(R<sup>6</sup>)C(=O)R<sup>4</sup>, -N(R<sup>6</sup>)SO<sub>2</sub>R<sup>4</sup>, -N(R<sup>6</sup>)C(=O)NY<sup>1</sup>Y<sup>2</sup>, -N(R<sup>6</sup>)C(=O)OR<sup>4</sup>, -S(O)<sub>n</sub>OR<sup>4</sup>, -S(O)<sub>n</sub>NY<sup>1</sup>Y<sup>2</sup>, -
- 10 OC(=O)NY<sup>1</sup>Y<sup>2</sup>, -OS(O)<sub>n</sub>R<sup>4</sup>, -OC(=O)R<sup>4</sup> and optionally substituted thienyl,

R<sup>2</sup> and R<sup>3</sup> are such that:

either R<sup>2</sup> and R<sup>3</sup>, which may be identical or different, represent H, R<sup>4</sup>, halogen, haloalkyl, OH, NO<sub>2</sub>, CN, OR<sup>4</sup>, COR<sup>4</sup>, S(O)<sub>n</sub>R<sup>4</sup>, -C(=O)NY<sup>1</sup>Y<sup>2</sup>, -C(=O)OR<sup>4</sup>, -C(=O)OH, -NY<sup>1</sup>Y<sup>2</sup>, -N(R<sup>6</sup>)C(=O)R<sup>4</sup>, -N(R<sup>6</sup>)SO<sub>2</sub>R<sup>4</sup>, -N(R<sup>6</sup>)C(=O)NY<sup>1</sup>Y<sup>2</sup>, -N(R<sup>6</sup>)C(=O)OR<sup>4</sup>, -S(O)<sub>n</sub>OR<sup>4</sup>, -S(O)<sub>n</sub>NY<sup>1</sup>Y<sup>2</sup>, -OC(=O)NY<sup>1</sup>Y<sup>2</sup> and -OC(=O)R<sup>4</sup>

- 15 or R<sup>2</sup> represents H, R<sup>4</sup>, halogen, haloalkyl, OH, NO<sub>2</sub>, CN, OR<sup>4</sup>, COR<sup>4</sup>, S(O)<sub>n</sub>R<sup>4</sup>, -C(=O)NY<sup>1</sup>Y<sup>2</sup>, -C(=O)OR<sup>4</sup>, -C(=O)OH, -NY<sup>1</sup>Y<sup>2</sup>, -N(R<sup>6</sup>)C(=O)R<sup>4</sup>, -N(R<sup>6</sup>)SO<sub>2</sub>R<sup>4</sup>, -N(R<sup>6</sup>)C(=O)NY<sup>1</sup>Y<sup>2</sup>, -N(R<sup>6</sup>)C(=O)OR<sup>4</sup>, -S(O)<sub>n</sub>OR<sup>4</sup>, -S(O)<sub>n</sub>NY<sup>1</sup>Y<sup>2</sup>, -OC(=O)NY<sup>1</sup>Y<sup>2</sup> and -OC(=O)R<sup>4</sup>
- and R<sup>3</sup> represents alkyl, haloalkyl, halogen and OR<sup>6</sup>

- 20 or R<sup>2</sup> and R<sup>3</sup> together form a 5- to 6-membered carbon-based ring containing one or more hetero atoms, which may be identical or different, chosen from O, N and S,

R<sup>4</sup> represents alkyl, alkenyl, cycloalkyl, aryl, heteroaryl, cycloalkylalkyl, heterocycloalkyl, hetero-arylalkyl and arylalkyl, all these radicals being optionally substituted with one or more radicals chosen from aryl, OH, OR<sup>5</sup>, C(=O)NY<sup>3</sup>Y<sup>4</sup>, NY<sup>3</sup>Y<sup>4</sup> and C(=O)OR<sup>6</sup>,

- 25 R<sup>5</sup> represents alkyl, alkenyl, cycloalkyl, heterocycloalkyl, aryl, heteroaryl, arylalkyl, cycloalkylalkyl, heteroarylalkyl and heterocycloalkylalkyl.

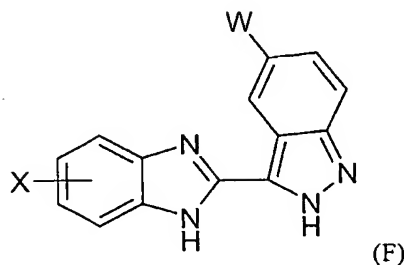
R<sup>6</sup> represents H and C1-C4 alkyl,

n represents an integer from 0 to 2

Y<sup>1</sup> and Y<sup>2</sup> are such that: either Y<sup>1</sup> and Y<sup>2</sup>, which may be identical or different, represent H, alkyl,

- 30 alkenyl, cycloalkyl, aryl, arylalkyl, heteroaryl or heteroarylalkyl, all these radicals being optionally substituted with one or more radicals chosen from hydroxyl, -C(=O)-NY<sup>3</sup>Y<sup>4</sup>, -C(=O)OR<sup>6</sup> and NY<sup>3</sup>Y<sup>4</sup>, or Y<sup>1</sup> and Y<sup>2</sup> form, together with the nitrogen atom to which they are attached, a cyclic amino radical, Y<sup>3</sup> and Y<sup>4</sup> are such that: either Y<sup>3</sup> and Y<sup>4</sup>, which may be identical or different, represent hydrogen, alkenyl, alkyl, aryl, arylalkyl, cycloalkyl, heteroaryl or heteroarylalkyl or Y<sup>3</sup> and Y<sup>4</sup> form, together with the nitrogen atom to which they are attached, a cyclic amino radical,
- 35 A<sub>5</sub> represents H or alkyl,

it being understood that when  $R^1$  represents an indazolyl radical to give the compounds of formula (F) below:



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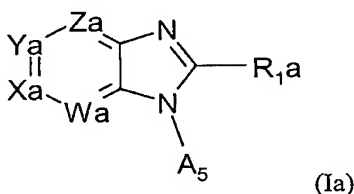
with X representing H,  $R^2$  or  $R^3$  as defined above, then W necessarily represents H or unsubstituted alkyl,

the said compounds of formula (F) being in any possible racemic, enantiomeric or diastereoisomeric isomer form, and also the addition salts with mineral and organic acids or with mineral bases.

- 10 It is obvious that, according to the ring represented by  $R^1$  and its number of members,  $R^1$  can comprise one, two or three substituents represented by  $X^1$ ,  $X^2$  and  $X^3$ .

One subject of the present invention is thus the compounds of formula (I) as defined above corresponding to the formula (Ia):

15



in which:

- Xa represents  $C-R^2a$  and Wa, Ya and Za, which may be identical or different, represent CH or  $CR^3a$ ;
- 20  $R^1a$  represents aryl or heteroaryl chosen from pyrazolyl, triazolyl or indazolyl radicals, all these radicals being optionally substituted with one or more radicals  $X^1a$ ,  $X^2a$  or  $X^3a$  chosen from H, halogen, OH,  $R^4a$ ,  $OR^4a$ ,  $NY^1aY^2a$ ,  $S(O)_nR^4a$ ,  $-C(=O)NY^1aY^2a$ ,  $-C(=O)OR^4a$ ,  $-N(R^6a)C(=O)R^4a$ ,  $-N(R^6a)SO_2R^4a$ ,  $-N(R^6a)C(=O)NY^1aY^2a$ ,  $-N(R^6a)C(=O)OR^4a$ ,  $-OC(=O)NY^1aY^2a$  and  $-OC(=O)R^4a$ ,  $-OS(O)_nR^4a$  and thienyl optionally substituted with an alkyl radical,
- 25  $R^2a$  and  $R^3a$  are such that:
- either  $R^2a$  and  $R^3a$ , which may be identical or different, represent H,  $R^4a$ , halogen, OH,  $OR^4a$ ,  $C(=O)NY^1aY^2a$ ,  $-C(=O)OR^4a$ ,  $-C(=O)OH$ , and  $R^3a$  represents alkyl, halogen and  $OR^6a$ ,

or  $R^2a$  represents H,  $R^4a$ , halogen, OH,  $OR^4a$ ,  $C(=O)NY^1aY^2a$ ,  $-C(=O)OR^4a$ ,  $-C(=O)OH$ , and  $R^3a$  represents alkyl, halogen and  $OR^6$ ,

or  $R^2a$  and  $R^3a$  together form an  $-O-CH_2-O$  or  $-O-CH_2-CH_2-O$  ring,

$R^4a$  represents alkyl, cycloalkyl, aryl, heteroaryl, heterocycloalkyl, heteroarylalkyl or arylalkyl, all

5 these radicals being optionally substituted with one or more radicals chosen from aryl, OH,  $OR^5a$ ,  $C(=O)NY^3aY^4a$ ,  $NY^3aY^4a$  and  $C(=O)OR^6a$ ,

$R^5a$  represents alkyl, alkenyl, cycloalkyl, heterocycloalkyl, aryl, heteroaryl, arylalkyl, cycloalkylalkyl, heteroarylalkyl and heterocycloalkylalkyl,

$R^6a$  represents H and C1-C4 alkyl,

10 n represents an integer from 0 to 2,

$Y^1a$  and  $Y^2a$  are such that: either  $Y^1a$  and  $Y^2a$ , which may be identical or different, represent H, alkyl, cycloalkyl, aryl and heteroaryl, all these radicals being optionally substituted with one or more radicals chosen from hydroxyl,  $-C(=O)-NY^3Y^4$ ,  $-C(=O)OR^6$  and  $NY^3Y^4$ , or  $Y^1a$  and  $Y^2a$  form, together with the nitrogen atom to which they are attached, a cyclic amino radical,

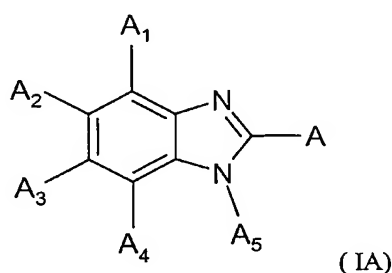
15  $Y^3a$  and  $Y^4a$  are such that: either  $Y^3a$  and  $Y^4a$ , which may be identical or different, represent hydrogen, alkyl, aryl, arylalkyl, cycloalkyl, heteroaryl or heteroarylalkyl, or  $Y^3a$  and  $Y^4a$  form, together with the nitrogen atom to which they are attached, a cyclic amino radical,

$A_5$  represents H or alkyl,

the said compounds of formula (Ia) being in any possible racemic, enantiomeric or diastereoisomeric

20 isomer form, and also the addition salts with mineral and organic acids or with mineral bases.

One subject of the present invention is thus the compounds of formula (I) as defined above corresponding to the formula (IA):



25

in which A represents a saturated heterocyclic radical which is either a 5- or 6-membered monocyclic radical or a bicyclic radical that is not more than 10-membered, these members being such that at least two of them represent a nitrogen atom and the others, which may be

30 identical or different, represent a carbon member or a hetero atom member chosen from O, N



and S, this heterocycle A being optionally substituted with one or more radicals  $XA^1$ ,  $XA^2$  or  $XA^3$  chosen from the values indicated hereinabove for the radicals  $X^1$ ,  $X^2$  or  $X^3$ ,

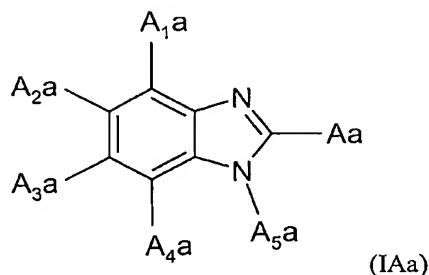
- 5  $A_1$ ,  $A_2$ ,  $A_3$  and  $A_4$ , which may be identical or different, are chosen from a hydrogen atom, halogen atoms and hydroxyl, alkyl, alkenyl, alkoxy, nitro, cyano, aryl, heteroaryl and aryloxy radicals, a carboxyl radical which is free, salified, esterified with an alkyl radical or amidated with a radical  $NA^6A^7$  such that either  $A^6$  and  $A^7$ , which may be identical or different, are chosen from a hydrogen atom and optionally substituted alkyl, alkoxyalkyl, phenoxyalkyl, aryl, arylalkyl, cycloalkyl, cycloalkylalkyl, heterocycloalkylalkyl and heteroarylalkyl radicals, or  $A^6$  and  $A^7$  form, together with
- 10 the nitrogen atom to which they are attached, an optionally substituted 5- or 6-membered cyclic radical, it being understood that two consecutive radicals among  $A_1$ ,  $A_2$ ,  $A_3$  and  $A_4$  can form, with the benzimidazole radical to which they are attached, a 5- to 6-membered carbon-based ring containing one or more hetero atoms, which may be identical or different, chosen from O, N and S,
- 15  $A_5$  represents a hydrogen atom or an alkyl radical,  
 $R^{6b}$  represents hydrogen, alkyl, alkenyl, cycloalkyl, phenyl, phenylalkyl and cycloalkylalkyl,

- all the alkyl, alkenyl, aryl, heteroaryl, aryloxy, cycloalkyl and heterocycloalkyl radicals present in the above radicals being optionally substituted with one or more radicals chosen from halogen atoms and
- 20 hydroxyl, cyano, alkyl, alkoxy, amino, alkylamino, dialkylamino, phenylamino, phenylalkylamino, acylamino ( $NH-COR^6$ ),  $-C(=O)OR^{6b}$ , acyl  $-C(=O)R^{6b}$ , hydroxyalkyl, carboxyalkyl, phenoxyalkyl,  $S(O)_n$ -alk,  $S(O)_n-NH_2$ ,  $S(O)_n-NH(alk)$ ,  $S(O)_n-N(alk)_2$ ,  $CF_3$ ,  $OCF_3$ ,  $NO_2$ ,  $CN$ , phenyl, itself optionally substituted with one or more halogen atoms, thienyl, phenoxy, phenylalkoxy,  $-C(=O)-NH_2$ ,  $-C(=O)-NH(alk)$  and  $C(=O)-N(alk)_2$  radicals,
- 25 all the above alkyl, alkenyl, alkoxy and alkylthio radicals being linear or branched and containing not more than 4 carbon atoms,  
all the phenyl radicals of the above radicals furthermore being optionally substituted with a dioxole radical,

- 30  $n$  represents an integer from 0 to 2,

the said compounds of formula (IA) being in any possible racemic, enantiomeric or diastereoisomeric isomer form, and also the addition salts with mineral and organic acids or with mineral and organic bases of the said compounds of formula (IA).

A subject of the present invention is thus the compounds of formula (I) as defined above, corresponding to the formula (IAa):



- 5 in which Aa represents a pyrazolyl, triazolyl or indazolyl radical, this heterocycle Aa being optionally substituted with one or more radicals  $XA^1$ ,  $XA^2$  or  $XA^3$  chosen from the values indicated hereinabove for the radicals  $X^1$ ,  $X^2$  or  $X^3$ ,
- 10  $A_{1a}$ ,  $A_{2a}$ ,  $A_{3a}$  and  $A_{4a}$ , which may be identical or different, are chosen from a hydrogen atom, halogen atoms, hydroxyl, alkyl, alkoxy, nitro, cyano, phenyl and phenoxy radicals, and a carboxyl radical which is free, salified, esterified with an alkyl radical or amidated with a radical  $NA^6aA^7a$  such that either  $A^6a$  and  $A^7a$ , which may be identical or different, are chosen
- 15 thienylalkyl and pyridylalkyl radicals, or  $A_{6a}$  and  $A_{7a}$  form, together with the nitrogen atom to which they are attached, a pyrrolidinyl, pyrazolidinyl, pyrazolinyl, piperidyl, morpholino or piperazinyl radical optionally substituted on the second nitrogen atom with an alkyl or phenyl radical, which are themselves optionally substituted,
- 20 it being understood that two consecutive radicals from among  $A_{1a}$ ,  $A_{2a}$ ,  $A_{3a}$  and  $A_{4a}$  may form, with the benzimidazole radical to which they are attached, an optionally substituted 5- to 6-membered carbon-based ring containing one or two oxygen atoms,
- $A_{5a}$  represents a hydrogen atom or an alkyl radical,
- 25 the phenyl and phenoxy radicals above being optionally substituted with one or more radicals chosen from halogen atoms and hydroxyl, cyano, trifluoromethyl, trifluoromethoxy, alkyl, alkoxy, amino, alkylamino, dialkylamino, phenylamino, phenylalkylamino, free, salified or esterified carboxyl, and dioxole radicals,
- 30

all the alkyl, alkoxy and alkylthio radicals above being linear or branched and containing not more than 6 carbon atoms,

the said compounds of formula (IAa) being in any possible racemic, enantiomeric or diastereoisomeric isomer form, and also the addition salts with mineral and organic acids or with mineral and organic bases of the said compounds of formula (IAa).

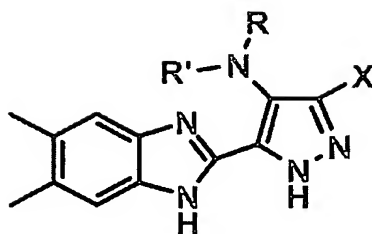
- 10 The substituents  $X^1$ ,  $X^2$  and  $X^3$  as defined above are in particular such that one represents a hydrogen atom and the other two, which may be identical or different, are chosen from halogen atoms and OH,  $R^4a$ ,  $OR^4a$ ,  $CF_3$ ,  $OCF_3$ ,  $NO_2$ , CN,  $NY^1aY^2a$ , acylamino ( $NH-COR^{6b}$ ),  $S(O)_n-alk$ ,  $S(O)_n-NH_2$ ,  $S(O)_n-NH(alk)$ ,  $S(O)_n-N(alk)_2$ ,  $-C(=O)-NH_2$ ,  $-C(=O)-NH(alk)$ ,  $C(=O)-N(alk)_2$ ,  $-C(=O)OR^4a$ ,  $-N(R^{6b})C(=O)R^4a$ ,  $-N(R^{6b})SO_2R^4a$ ,  $-N(R^{6b})C(=O)NY^1aY^2a$ ,  $-N(R^{6b})C(=O)OR^4a$ ,  $-OC(=O)NY^1aY^2a$  and thienyl radicals, the thienyl radical being optionally substituted with an alkyl radical,
- 15  $R^4a$ ,  $Y^1a$ ,  $Y^2a$  and  $R^{6b}$  having the values defined above and alk representing a linear or branched alkyl radical including not more than 6 carbon atoms and optionally substituted as indicated above.

All the alkylthio radicals are such that the sulfur atom is optionally oxidized to sulfone or sulfoxide with one or two oxygen atoms.

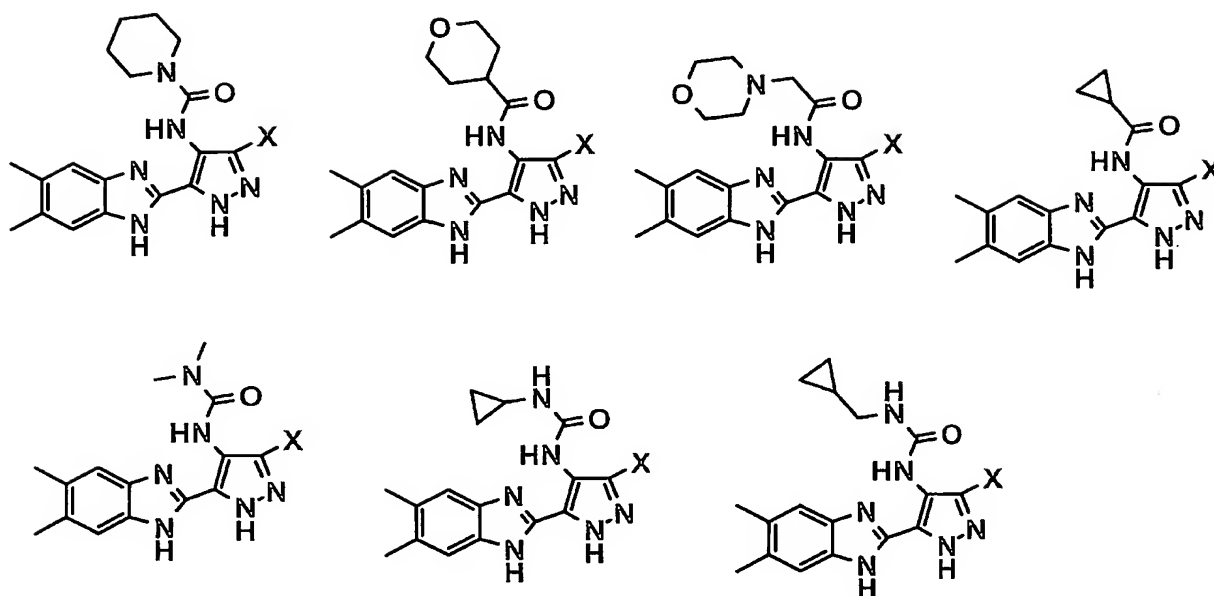
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Tables I, II and III described below give examples of compounds illustrating the present invention, with in particular substituents chosen from the values of  $X^1$ ,  $X^2$  and  $X^3$  as defined above.

TABLE I



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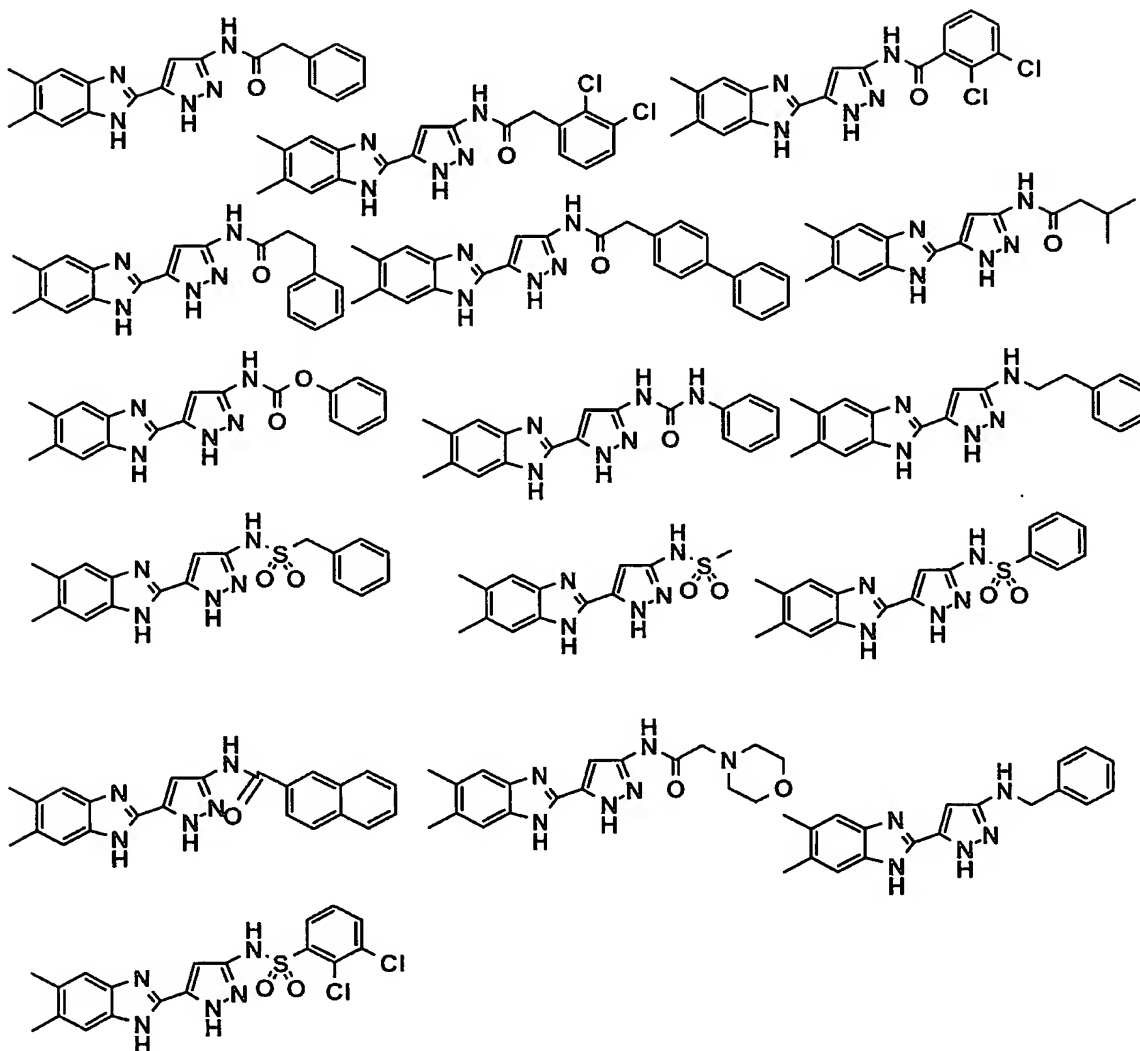
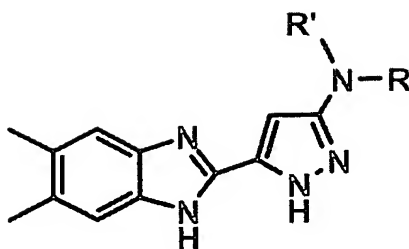


with X represents hydrogen, halogen or alkoxy as defined above.

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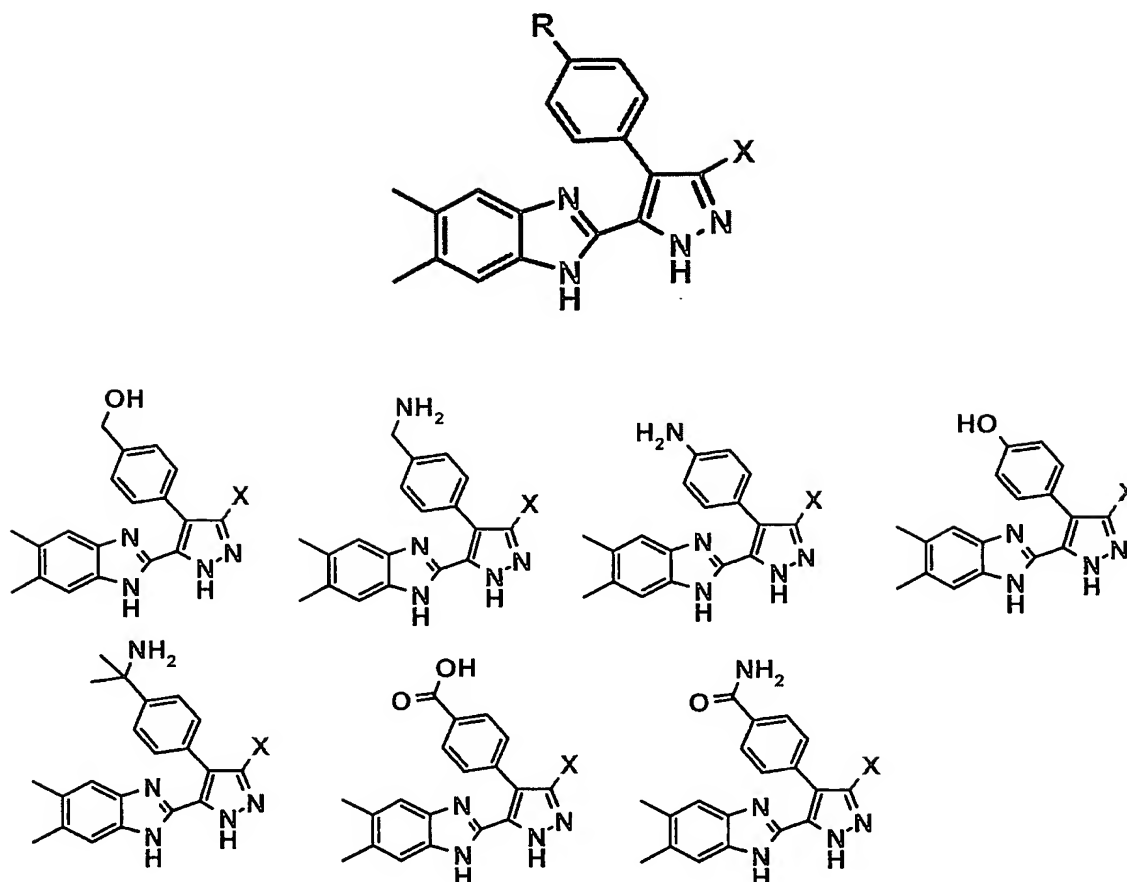
TABLE II



5

in which NR'R represents NY<sup>1</sup>Y<sup>2</sup> as defined above.

TABLE III



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in which X represents hydrogen, alkynyl or  $\text{NHCOCH}_2\text{Ph}$  which is optionally substituted.

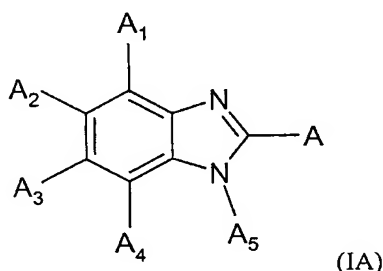
The subject of the present invention is thus the compounds of formula (I) as defined above in which the substituents of the said compounds of formula (I) have the any of the values indicated as defined

10 hereinabove and in which the aryl radicals represent the phenyl and naphthyl radicals; the heteroaryl radicals represent the furyl, thienyl, benzothienyl, thianthrenyl, pyridyl, pyrazolyl, benzimidazolyl, benzofuran, isobenzofuran and dihydrobenzofuran radicals; the cycloalkyl radicals represent a cyclopropyl, cyclobutyl, cyclopentyl or cyclohexyl radical; the heterocycloalkyl radicals represent the hexahydropyran, piperidyl or morpholino radicals; the heterocycloalkylalkyl radicals represent the

15 hexahydropyranyllalkyl, piperidylalkyl and morpholinoalkyl radicals; the arylalkyl radicals represent the phenylalkyl, ethylenedioxyphenylalkyl and naphthylalkyl radicals; the heteroarylalkyl radicals represent the thienylalkyl, pyridylalkyl, furylalkyl, pyrazolylalkyl, benzothienylalkyl, dihydrobenzofuranyllalkyl and benzimidazolylalkyl radicals; the aryloxy radicals represent the phenoxy and naphthyloxy radicals; the arylalkoxy radicals represent the phenylalkoxy and naphthylalkoxy

radicals; and the aryloxyalkyl radicals represent the phenoxyalkyl radical; all these radicals being optionally substituted as indicated hereinabove.

One subject of the present invention is, more particularly, the compounds of formula (I) as defined  
 5 above corresponding to the formula (IA):



10 in which A represents a saturated heterocyclic radical which is either a 5- or 6-membered monocyclic radical or a bicyclic radical that is not more than 10-membered, these members being such that at least two of them represent a nitrogen atom and the others, which may be identical or different, represent a carbon member or a hetero atom member chosen from O, N and S, this heterocycle A optionally being substituted with one or more radicals  $XA^1$ ,  $XA^2$  or  $XA^3$  chosen from halogen atoms, alkyl, alkoxy or alkylthio radicals or thienyl radicals optionally substituted with an alkyl radical,

15

$A_1$ ,  $A_2$ ,  $A_3$  and  $A_4$ , which may be identical or different, are chosen from a hydrogen atom, halogen atoms and hydroxyl, alkyl, alkoxy, nitro, cyano, phenyl and phenoxy radicals, a carboxyl radical which is free, salified, esterified with an alkyl radical or amidated with a radical  $NA^6A^7$  such that either  $A^6$  and  $A^7$ , which may be identical or different, are chosen from a hydrogen atom and alkyl, phenyl, phenylalkyl, cycloalkylalkyl, cycloalkyl and heteroarylalkyl radicals, or  $A^6$  and  $A^7$  form, together with the nitrogen atom to which they are attached, a 5- or 6-membered cyclic radical, it being understood that two consecutive radicals among  $A_1$ ,  $A_2$ ,  $A_3$  and  $A_4$  can form, with the benzimidazole radical to which they are attached, a 5- to 6-membered carbon-based ring containing one or more hetero atoms, which may be identical or different, chosen from O, N and S,

25

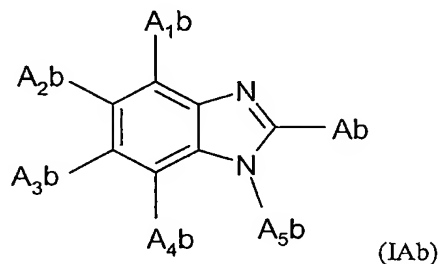
$A_5$  represents a hydrogen atom or an alkyl radical, all the phenyl, phenoxy, cycloalkyl and heteroarylalkyl radicals above being optionally substituted with one or more radicals chosen from halogen atoms and hydroxyl, cyano, trifluoromethyl, trifluoromethoxy, alkyl, alkoxy, amino, alkylamino, dialkylamino, phenylamino, phenylalkylamino, free, salified or esterified carboxyl, and dioxole radicals,

30

all the alkyl, alkoxy and alkylthio radicals above being linear or branched and containing not more than 6 carbon atoms,

the said compounds of formula (IA) being in any possible racemic, enantiomeric or diastereoisomeric isomer form, and also the addition salts with mineral and organic acids or with mineral and organic bases of the said compounds of formula (IA).

- 5 A subject of the present invention is also, more particularly, the compounds of formula (I) as defined above, corresponding to the formula (IAb):



- in which Ab represents a pyrazolyl or indazolyl radical optionally substituted with one or two radicals chosen from halogen atoms and OH, alkyl, alkynyl, -OR<sup>6b</sup> (including alkoxy), -COR<sup>6b</sup>, -O-COR<sup>6b</sup>,  
 10 -OS(O)<sub>n</sub>R<sup>6b</sup>, -O(CH<sub>2</sub>)<sub>n</sub>-CO-R<sup>6b</sup>, phenyl, phenylalkyl, CF<sub>3</sub>, OCF<sub>3</sub>, NO<sub>2</sub>, CN, NY<sup>1b</sup>Y<sup>2b</sup>,  
 -NH-C(=O)NY<sup>1b</sup>Y<sup>2b</sup>, acylamino (NH-CO-R<sup>6b</sup>), S(O)<sub>n</sub>-alk, S(O)<sub>n</sub>-NY<sup>1b</sup>Y<sup>2b</sup>, -C(=O)-NY<sup>1b</sup>Y<sup>2b</sup>,  
 -C(=O)OR<sup>6b</sup>, -NH-C(=O)R<sup>6b</sup>, -NH-S(O)<sub>n</sub>R<sup>6b</sup>, -NH-C(=O)OR<sup>6b</sup>, -N(R<sup>6b</sup>)C(=O)NY<sup>1b</sup>Y<sup>2b</sup>,  
 -OC(=O)NY<sup>1b</sup>Y<sup>2b</sup> and thienyl radicals, all these radicals being optionally substituted,  
 15 with NY<sup>1b</sup>Y<sup>2b</sup> such that either Y<sup>1b</sup> and Y<sup>2b</sup>, which may be identical or different, are chosen from hydrogen and optionally substituted alkyl, cycloalkyl, cycloalkylalkyl, phenyl, naphthyl, phenoxy, phenylalkyl, phenylalkylthio and naphthylalkyl or Y<sup>1b</sup> and Y<sup>2b</sup> form, together with the nitrogen atom to which they are attached, a piperidyl, hexahydrofuran, morpholinyl or morpholinylalkyl radical,  
 20 A<sub>1b</sub>, A<sub>2b</sub>, A<sub>3b</sub> and A<sub>4b</sub>, which may be identical or different, are chosen from a hydrogen atom, halogen atoms, hydroxyl, alkyl, alkenyl, -OR<sup>6b</sup> (including alkoxy), -CO-R<sup>6b</sup>, -O-COR<sup>6b</sup>,  
 -OS(O)<sub>n</sub>R<sup>6b</sup>, -O(CH<sub>2</sub>)<sub>n</sub>-CO-R<sup>6b</sup>, nitro, cyano, furyl, thienyl, benzothienyl, naphthyl, thianthrenyl, phenyl and phenoxy radicals and a carboxyl radical which is free, salified, esterified with an alkyl radical or amidated with a radical NA<sup>6b</sup>A<sup>7b</sup> such that either A<sup>6b</sup> and  
 25 A<sup>7b</sup>, which may be identical or different, are chosen from hydrogen and alkyl, alkoxyalkyl, phenoxyalkyl, phenyl, phenylalkyl, cycloalkylalkyl, cycloalkyl, furylalkyl, naphthylalkyl, thienylalkyl, piperidylalkyl, pyridylalkyl, benzothienylalkyl, pyrazolylalkyl, dihydrobenzofuranylalkyl, hexahydropyranylalkyl, ethylenedioxyphenylalkyl and benzimidazolylalkyl radicals, all these radicals being optionally substituted, or A<sup>6b</sup> and A<sup>7b</sup> form,  
 30 together with the nitrogen atom to which they are attached, a pyrrolidinyl, morpholino or



piperazinyl radical, the piperazinyl radical being optionally substituted on the second nitrogen atom with an alkyl radical itself optionally substituted,

5 it being understood that two consecutive radicals among  $A_1b$ ,  $A_2b$ ,  $A_3b$  and  $A_4b$  can form, with the benzimidazole radical to which they are attached, an optionally substituted 4,5-ethylenedioxybenzimidazole radical or an optionally substituted 4,5-methylenedioxybenzimidazole radical,  $A_5b$  represents a hydrogen atom,

10 all the above radicals containing alkyl, alkenyl, phenyl, phenoxy, furyl, thienyl, piperidyl, pyridyl, pyrazolyl and benzimidazolyl being optionally substituted with one or more radicals chosen from halogen atoms and hydroxyl, cyano, alkyl, alkoxy, amino, alkylamino, dialkylamino, phenylamino, phenylalkylamino, acylamino ( $NH-COR^{6b}$ ),  $-C(=O)OR^{6b}$ , acyl  $-C(=O)R^{6b}$ , hydroxyalkyl, carboxyalkyl, phenoxyalkyl,  $S(O)_n$ -alk,  $S(O)_n-NH_2$ ,  $S(O)_n-NH(alk)$ ,  $S(O)_n-N(alk)_2$ ,  $CF_3$ ,  $OCF_3$ ,  $NO_2$ ,  
15 CN, phenyl, itself optionally substituted with one or more halogen atoms, thienyl, phenoxy, phenylalkoxy,  $-C(=O)-NH_2$ ,  $-C(=O)-NH(alk)$  and  $C(=O)-N(alk)_2$  radicals,

with n representing an integer from 0 to 2,

20 and  $R^{6b}$  representing hydrogen, alkyl, alkenyl, cycloalkyl, phenyl, pyridyl, thienyl, naphthyl, isoxazole, adamantyl, quinoline, quinolone, dihydroquinolone,  $-NH$ -phenyl, phenylalkyl and cycloalkylalkyl, all these radicals being optionally substituted with a morpholino, piperidyl or phenyl radical itself optionally substituted with one or more radicals chosen from halogen atoms and the cyano,  $CF_3$ ,  $OCF_3$ , alkyl, phenyl- $S(O)_n$ -alk-phenyl, alkoxy,  $NH_2$ ,  $NHalk$ ,  $N(alk)_2$ ,  $SO_2NH_2$ ,  $SO_2Nalk$  or  $SO_2N(alk)_2$  radical,

25

all the alkyl, alkenyl, alkoxy and alkylthio radicals above being linear or branched and containing not more than 10 carbon atoms,

all the phenyl radicals of the above radicals furthermore being optionally substituted with a dioxole radical,

30

the said compounds of formula (IAb) being in any possible racemic, enantiomeric or diastereomeric isomer form, and also the addition salts with mineral and organic acids or with mineral and organic bases of the said compounds of formula (IAb).

35

One subject of the present invention is thus in particular the compounds of formula (I) as defined above corresponding to the formula (IAb) in which Ab represents a pyrazolyl or indazolyl radical

optionally substituted with one or two radicals chosen from halogen atoms and OH, alkyl, alkynyl, alkoxy, phenyl, phenylalkyl,  $\text{CF}_3$ ,  $\text{OCF}_3$ ,  $\text{NO}_2$ , CN,  $\text{NY}^1\text{bY}^2\text{b}$ ,  $-\text{NH}-\text{C}(=\text{O})\text{NY}^1\text{bY}^2\text{b}$ , acylamino ( $\text{NH}-\text{CO}-\text{R}^6\text{b}$ ),  $\text{S}(\text{O})_n\text{-alk}$ ,  $\text{S}(\text{O})_n\text{-NY}^1\text{bY}^2\text{b}$ ,  $-\text{C}(=\text{O})\text{-NY}^1\text{bY}^2\text{b}$ ,  $-\text{C}(=\text{O})\text{OR}^6\text{b}$ ,  $-\text{NH}-\text{C}(=\text{O})\text{R}^6\text{b}$ ,  $-\text{NH}-\text{S}(\text{O})_n\text{R}^6\text{b}$ ,  $-\text{NH}-\text{C}(=\text{O})\text{OR}^6\text{b}$ ,  $-\text{N}(\text{R}^6\text{b})\text{C}(=\text{O})\text{NY}^1\text{bY}^2\text{b}$ ,  $-\text{OC}(=\text{O})\text{NY}^1\text{bY}^2\text{b}$  and thienyl radicals  
 5 which are optionally substituted,

with  $\text{NY}^1\text{bY}^2\text{b}$  such that either  $\text{Y}^1\text{b}$  and  $\text{Y}^2\text{b}$ , which may be identical or different, are chosen from hydrogen and optionally substituted alkyl, cycloalkyl, cycloalkylalkyl, phenyl, naphthyl, phenoxy, phenylalkyl, phenylalkylthio and naphthylalkyl or  $\text{Y}^1\text{b}$  and  $\text{Y}^2\text{b}$  form, together with the nitrogen atom  
 10 to which they are attached, a piperidyl, hexahydrofuran, morpholinyl or morpholinylalkyl radical,

$\text{A}_1\text{b}$ ,  $\text{A}_2\text{b}$ ,  $\text{A}_3\text{b}$  and  $\text{A}_4\text{b}$ , which may be identical or different, are chosen from a hydrogen atom, halogen atoms, hydroxyl, alkyl, alkenyl, alkoxy, nitro, cyano, furyl, thienyl, benzothienyl, naphthyl, thianthrenyl, phenyl and phenoxy radicals and a carboxyl radical which is free,  
 15 salified, esterified with an alkyl radical or amidated with a radical  $\text{NA}^6\text{bA}^7\text{b}$  such that either  $\text{A}^6\text{b}$  and  $\text{A}^7\text{b}$ , which may be identical or different, are chosen from hydrogen and alkyl, alkoxyalkyl, phenoxyalkyl, phenyl, phenylalkyl, cycloalkylalkyl, cycloalkyl, furylalkyl, naphthylalkyl, thienylalkyl, piperidylalkyl, pyridylalkyl, benzothienylalkyl, pyrazolylalkyl, dihydrobenzofuranylalkyl, hexahydropyranylalkyl, ethylenedioxyphenylalkyl and  
 20 benzimidazolylalkyl radicals, all these radicals being optionally substituted, or  $\text{A}^6\text{b}$  and  $\text{A}^7\text{b}$  form, together with the nitrogen atom to which they are attached, a pyrrolidinyl, morpholino or piperazinyl radical, the piperazinyl radical being optionally substituted on the second nitrogen atom with an alkyl radical itself optionally substituted,

25 it being understood that two consecutive radicals among  $\text{A}_1\text{b}$ ,  $\text{A}_2\text{b}$ ,  $\text{A}_3\text{b}$  and  $\text{A}_4\text{b}$  can form, with the benzimidazole radical to which they are attached, an optionally substituted 4,5-ethylenedioxybenzimidazole radical or an optionally substituted 4,5-methylenedioxybenzimidazole radical,

$\text{A}_5\text{b}$  represents a hydrogen atom,

30 all the above radicals containing alkyl, alkenyl, phenyl, phenoxy, furyl, thienyl, piperidyl, pyridyl, pyrazolyl and benzimidazolyl being optionally substituted with one or more radicals chosen from halogen atoms and hydroxyl, cyano, alkyl, alkoxy, amino, alkylamino, dialkylamino, phenylamino, phenylalkylamino, acylamino ( $\text{NH}-\text{COR}^6\text{b}$ ),  $-\text{C}(=\text{O})\text{OR}^6\text{b}$ , acyl  $-\text{C}(=\text{O})\text{R}^6\text{b}$ , hydroxyalkyl,  
 35 carboxyalkyl, phenoxyalkyl,  $\text{S}(\text{O})_n\text{-alk}$ ,  $\text{S}(\text{O})_n\text{-NH}_2$ ,  $\text{S}(\text{O})_n\text{-NH(alk)}$ ,  $\text{S}(\text{O})_n\text{-N(alk)}_2$ ,  $\text{CF}_3$ ,  $\text{OCF}_3$ ,  $\text{NO}_2$ ,

CN, phenyl, itself optionally substituted with one or more halogen atoms, thienyl, phenoxy, phenylalkoxy,  $-C(=O)-NH_2$ ,  $-C(=O)-NH(alk)$  and  $C(=O)-N(alk)_2$  radicals, with n representing an integer from 0 to 2, and  $R^{6b}$  representing hydrogen, alkyl, alkenyl, cycloalkyl, phenyl, phenylalkyl and cycloalkylalkyl,

5

all the alkyl, alkenyl, alkoxy and alkylthio radicals above being linear or branched and containing not more than 10 carbon atoms,

10

all the phenyl radicals of the above radicals furthermore being optionally substituted with a dioxole radical,

the said compounds of formula (IAb) being in any possible racemic, enantiomeric or diastereoisomeric isomer form, and also the addition salts with mineral and organic acids or with mineral and organic bases of the said compounds of formula (IAb).

15

A subject of the present invention is thus in particular the compounds of formula (I) as defined above corresponding to the formula (IAb) in which Ab represents a pyrazolyl radical substituted with one or two radicals such that one is chosen from hydrogen, halogen atoms and alkyl, alkynyl,  $-COR^{6b}$ , phenyl, phenylalkyl,  $CF_3$ ,  $NO_2$ , CN,  $NY^1bY^2b$ ,  $-NH-C(=O)NY^1bY^2b$ ,  $NH-CO-R^{6b}$ ,  $S(O)_n-alk$ ,  $S(O)_n-NY^1bY^2b$ ,  $-C(=O)-NY^1bY^2b$ ,  $-C(=O)OR^{6b}$ ,  $-NH-C(=O)R^{6b}$ ,  $-NH-S(O)_nR^{6b}$ ,  $-NH-C(=O)OR^{6b}$ ,

20

$-N(R^{6b})C(=O)NY^1bY^2b$  and thienyl radicals, all these radicals being optionally substituted,

and the other is chosen from OH,  $-OR^{6b}$ ,  $-O-COR^{6b}$ ,  $-OS(O)_nR^{6b}$ ,  $-O(CH_2)_n-CO-R^{6b}$  and  $-OC(=O)NY^1bY^2b$  radicals, all these radicals being optionally substituted,

25

with  $NY^1bY^2b$  such that  $Y^1b$  and  $Y^2b$ , which may be identical or different, are chosen from hydrogen and optionally substituted alkyl, cycloalkyl, cycloalkylalkyl, phenyl, naphthyl, phenoxy, phenylalkyl, phenylalkylthio and naphthylalkyl or  $Y^1b$  and  $Y^2b$  form, together with the nitrogen atom to which they are attached, a piperidyl, hexahydrofuran, morpholinyl or morpholinylalkyl radical,

30

$A_1b$ ,  $A_2b$ ,  $A_3b$  and  $A_4b$ , which may be identical or different, are such that two of them represent hydrogen and the other two, which may be identical or different, are chosen from a hydrogen atom, halogen atoms, hydroxyl, alkyl, alkenyl,  $-OR^{6b}$  (including alkoxy),  $-CO-R^{6b}$ ,  $-O-COR^{6b}$ ,  $-OS(O)_nR^{6b}$ ,  $-O(CH_2)_n-CO-R^{6b}$ , nitro, cyano, furyl, thienyl, benzothienyl, naphthyl, thianthrenyl, phenyl and phenoxy radicals and a carboxyl radical which is free, salified,

35

esterified with an alkyl radical or amidated with a radical  $NA^6bA^7b$  such that either  $A^6b$  and  $A^7b$ , which may be identical or different, are chosen from hydrogen and alkyl, alkoxyalkyl,

- phenoxyalkyl, phenyl, phenylalkyl, cycloalkylalkyl, cycloalkyl, furylalkyl, naphthylalkyl, thienylalkyl, piperidylalkyl, pyridylalkyl, benzothienylalkyl, pyrazolylalkyl, dihydrobenzofuranylalkyl, hexahydropyranylalkyl, ethylenedioxyphenylalkyl and benzimidazolylalkyl radicals, all these radicals being optionally substituted, or A<sup>6b</sup> and A<sup>7b</sup> form, together with the nitrogen atom to which they are attached, a pyrrolidinyl, morpholino or piperazinyl radical, the piperazinyl radical being optionally substituted on the second nitrogen atom with an alkyl radical itself optionally substituted, A<sub>5b</sub> represents a hydrogen atom,
- 10 all the above radicals containing alkyl, alkenyl, phenyl, phenoxy, furyl, thienyl, piperidyl, pyridyl, pyrazolyl and benzimidazolyl being optionally substituted with one or more radicals chosen from halogen atoms and hydroxyl, cyano, alkyl, alkoxy, amino, alkylamino, dialkylamino, phenylamino, phenylalkylamino, acylamino (NH-COR<sup>6b</sup>), -C(=O)OR<sup>6b</sup>, acyl -C(=O)R<sup>6b</sup>, hydroxyalkyl, carboxyalkyl, phenoxyalkyl, S(O)<sub>n</sub>-alk, S(O)<sub>n</sub>-NH<sub>2</sub>, S(O)<sub>n</sub>-NH(alk), S(O)<sub>n</sub>-N(alk)<sub>2</sub>, CF<sub>3</sub>, OCF<sub>3</sub>, NO<sub>2</sub>, CN, phenyl, itself optionally substituted with one or more halogen atoms, thienyl, phenoxy, phenylalkoxy, -C(=O)-NH<sub>2</sub>, -C(=O)-NH(alk) and C(=O)-N(alk)<sub>2</sub> radicals,
- 15 with n representing an integer from 0 to 2, and R<sup>6b</sup> representing hydrogen, alkyl, alkenyl, cycloalkyl, phenyl, pyridyl, thienyl, naphthyl, isoxazole, adamantyl, quinoline, quinolone, dihydroquinolone, -NH-phenyl, phenylalkyl and cycloalkylalkyl, all these radicals being optionally substituted with a morpholino, piperidyl or phenyl radical itself optionally substituted with one or more radicals chosen from halogen atoms and the cyano, CF<sub>3</sub>, OCF<sub>3</sub>, alkyl, phenyl-S(O)<sub>n</sub>-alk-phenyl, alkoxy, NH<sub>2</sub>, NHalk, N(alk)<sub>2</sub>, SO<sub>2</sub>NH<sub>2</sub>, SO<sub>2</sub>Nalk or SO<sub>2</sub>N(alk)<sub>2</sub> radical,
- 20 all the alkyl, alkenyl, alkoxy and alkylthio radicals above being linear or branched and containing not more than 10 carbon atoms,
- all the phenyl radicals of the above radicals furthermore being optionally substituted with a dioxole radical,
- 30 the said compounds of formula (IAb) being in any possible racemic, enantiomeric or diastereoisomeric isomer form, and also the addition salts with mineral and organic acids or with mineral and organic bases of the said compounds of formula (IAb).
- 35 A subject of the present invention is thus in particular the compounds of formula (I) as defined above corresponding to the formula (IAb) in which Ab represents a pyrazolyl or indazolyl radical optionally

substituted with one or more radicals chosen from halogen atoms and alkyl, alkoxy and thienyl radicals,

- 5 A<sub>1</sub>b, A<sub>2</sub>b, A<sub>3</sub>b and A<sub>4</sub>b, which may be identical or different, are chosen from a hydrogen atom; halogen atoms; radicals of the following types: hydroxyl, alkyl, alkenyl optionally substituted with phenyl itself optionally substituted with one or more halogen atoms, alkoxy, nitro, cyano, furyl, thienyl optionally substituted with acyl COalk, benzothienyl, naphthyl, thianthrenyl, phenyl and phenoxy which are optionally substituted; and a carboxyl radical which is free, salified, esterified with an alkyl radical or amidated with a radical NA<sup>6</sup>bA<sup>7</sup>b such that either
- 10 A<sup>6</sup>b and A<sup>7</sup>b, which may be identical or different, are chosen from hydrogen and radicals of the following types : alkyl, alkoxyalkyl containing not more than 6 carbon atoms, phenoxyalkyl optionally substituted with acylamino NH-C(O)alk, phenyl, optionally substituted phenylalkyl, cycloalkylalkyl, cycloalkyl, furylalkyl optionally substituted with one or more alkyl radicals, naphthylalkyl, thienylalkyl optionally substituted with alkyl or thienyl, piperidylalkyl
- 15 optionally substituted with a carboxyl radical which is free, salified or esterified with an alkyl radical, pyridylalkyl optionally substituted with one or more radicals chosen from halogen and CF<sub>3</sub>, benzothienylalkyl, pyrazolylalkyl optionally substituted with one or more alkyl radicals, dihydrobenzofuranylalkyl, hexahydropyranylalkyl, ethylenedioxyphenylalkyl, and benzimidazolylalkyl optionally substituted with one or more alkyl radicals,
- 20 or A<sup>6</sup>b and A<sup>7</sup>b form, together with the nitrogen atom to which they are attached, a pyrrolidinyl, morpholino or piperazinyl radical, the piperazinyl radical being optionally substituted on the second nitrogen atom with an alkyl radical,
- it being understood that two consecutive radicals among A<sub>1</sub>b, A<sub>2</sub>b, A<sub>3</sub>b and A<sub>4</sub>b can form, with
- 25 the benzimidazole radical to which they are attached, an optionally substituted 4,5-ethylenedioxybenzimidazole radical or an optionally substituted 4,5-methylenedioxybenzimidazole radical,
- A<sub>5</sub>a represents a hydrogen atom,
- 30 the phenyl, phenoxy and phenylalkyl radicals above being optionally substituted with one or more radicals chosen from halogen atoms, hydroxyl, cyano, alkyl, alkoxy, amino, alkylamino, dialkylamino, phenylamino, phenylalkylamino and NH-COalk radicals, a carboxyl radical which is free, salified or esterified with an alkyl radical, and hydroxyalkyl, carboxyalkyl, phenoxyalkyl, alkylthio, SO<sub>2</sub>alk, SO<sub>2</sub>NH<sub>2</sub>, SO<sub>2</sub>-NH(alk), SO<sub>2</sub>-N(alk)<sub>2</sub>, CF<sub>3</sub>, OCF<sub>3</sub>, NO<sub>2</sub>, CN, phenyl, itself optionally substituted with
- 35 one or more halogen atoms, thienyl, phenoxy, phenylalkoxy, -C(=O)-NH<sub>2</sub>, -C(=O)-NH(alk), C(=O)-N(alk)<sub>2</sub> and C(O)CH<sub>3</sub> radicals,

all the alkyl or alk, alkenyl, alkoxy and alkylthio radicals above being linear or branched and containing not more than 4 carbon atoms,

all the phenyl radicals of the above radicals furthermore being optionally substituted with a dioxole radical,

the said compounds of formula (IAb) being in any possible racemic, enantiomeric or diastereoisomeric isomer form, and also the addition salts with mineral and organic acids or with mineral and organic bases of the said compounds of formula (IAb).

A subject of the present invention is thus in particular the compounds of formula (I) as defined above corresponding to the formula (IAb) in which Ab, A<sub>1</sub>b, A<sub>2</sub>b, A<sub>3</sub>b, A<sub>4</sub>b and A<sub>5</sub>b have any of the meanings indicated hereinabove,

and when one of A<sub>1</sub>b, A<sub>2</sub>b, A<sub>3</sub>b and A<sub>4</sub>b represents a carboxyl radical amidated with a radical NA<sup>6</sup>bA<sup>7</sup>b, then either one of A<sup>6</sup>b and A<sup>7</sup>b represents a hydrogen atom or an alkyl radical and the other of A<sup>6</sup>b and A<sup>7</sup>b is chosen from the values defined for A<sup>6</sup>b and A<sup>7</sup>b, or A<sup>6</sup>b and A<sup>7</sup>b form, together with the nitrogen atom to which they are attached, a 5- or 6-membered cyclic radical,

the other substituents of the said compounds of formula (I) having the any of the values indicated hereinabove,

the said compounds of formula (IAb) being in any possible racemic, enantiomeric or diastereoisomeric isomer form, and also the addition salts with mineral and organic acids or with mineral and organic bases of the said compounds of formula (IAb).

A subject of the present invention is thus in particular the compounds of formula (I) as defined above in which X, W, Y and Z are such that two or three of them represent CH and the others are chosen from the values of CR<sup>2</sup> or CR<sup>3</sup> and, if appropriate, i.e., when two of them represent CH and CR<sup>2</sup> and CR<sup>3</sup> are adjacent to each other, can form a dioxole radical,

R<sup>2</sup>, R<sup>3</sup> and the other substituents of the said compounds of formula (I) having any of the values as defined hereinabove,

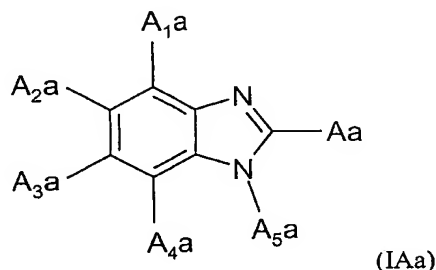
the said compounds of formula (I) being in any possible racemic, enantiomeric or diastereoisomeric isomer form, and also the addition salts with mineral and organic acids or with mineral and organic bases of the said compounds of formula (I).

- 5 The present invention thus relates in particular to the compounds of formula (IA) as defined above in which  $A_1$ ,  $A_2$ ,  $A_3$  and  $A_4$  are such that two or three of them represent a hydrogen atom and the others are chosen from the values of  $A_1$ ,  $A_2$ ,  $A_3$  and  $A_4$  and, if appropriate, i.e., when two of them represent a hydrogen atom and the other two are on adjacent carbons, can form a dioxole radical,
- 10 the other substituents of the compounds of formula (IA) having any of the values as defined hereinabove,

the said compounds of formula (IA) being in any possible racemic, enantiomeric or diastereoisomeric isomer form, and also the addition salts with mineral and organic acids or with mineral and organic

- 15 bases of the said compounds of formula (IA).

A subject of the present invention is also, more particularly, the compounds of formula (I) as defined above, corresponding to the formula (IAa):



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in which Aa represents a pyrazolyl, triazolyl or indazolyl radical, this heterocycle Aa being optionally substituted with one or more radicals  $XA^1$ ,  $XA^2$  or  $XA^3$  chosen from halogen atoms, alkyl, alkoxy or alkylthio radicals and thienyl radicals optionally substituted with an alkyl radical,

- 25  $A_{1a}$ ,  $A_{2a}$ ,  $A_{3a}$  and  $A_{4a}$ , which may be identical or different, are chosen from a hydrogen atom, halogen atoms, hydroxyl, alkyl, alkoxy, nitro, cyano, phenyl and phenoxy radicals, and a carboxyl radical which is free, salified, esterified with an alkyl radical or amidated with a radical  $NA^6aA^7a$  such that either  $A^6a$  and  $A^7a$ , which may be identical or different, are chosen from a hydrogen atom and alkyl, phenyl, phenylalkyl, cycloalkylalkyl, cycloalkyl, furylalkyl, thienylalkyl and pyridylalkyl radicals, or  $A^6a$  and
- 30  $A^7a$  form, together with the nitrogen atom to which they are attached, a pyrrolidinyl, pyrazolidinyl,

- pyrazoliny, piperidyl, morpholino or piperaziny radical optionally substituted on the second nitrogen atom with an alkyl or phenyl radical, which are themselves optionally substituted, it being understood that two consecutive radicals from among A<sub>1a</sub>, A<sub>2a</sub>, A<sub>3a</sub> and A<sub>4a</sub> may form, with the benzimidazole radical to which they are attached, an optionally substituted 5- to 6-membered carbon-based ring containing one or two oxygen atoms,
- 5 A<sub>5a</sub> represents a hydrogen atom or an alkyl radical, the phenyl and phenoxy radicals above being optionally substituted with one or more radicals chosen from halogen atoms and hydroxyl, cyano, trifluoromethyl, trifluoromethoxy, alkyl, alkoxy, amino, alkylamino, dialkylamino, phenylamino, phenylalkylamino, free, salified or esterified carboxyl, and
- 10 dioxole radicals, all the alkyl, alkoxy and alkylthio radicals above being linear or branched and containing not more than 6 carbon atoms, the said compounds of formula (IAa) being in any possible racemic, enantiomeric or diastereoisomeric isomer form, and also the addition salts with mineral and organic acids or with mineral and organic
- 15 bases of the said compounds of formula (IAa).

One subject of the present invention is, more particularly, the compounds of formula (I) as defined above in which R represents a pyrazolyl or indazolyl radical, the other substituents having the values indicated above or below.

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Among the preferred compounds that are particularly noted are the compounds of formula (I) in which A<sub>a</sub> represents a pyrazolyl or indazolyl radical optionally substituted as indicated above and below, A<sub>1a</sub>, A<sub>2a</sub>, A<sub>3a</sub> and A<sub>4a</sub> are chosen from the following values:

- A<sub>1a</sub> represents hydrogen or carboxyl or forms a ring with

25 the adjacent member A<sub>2a</sub>

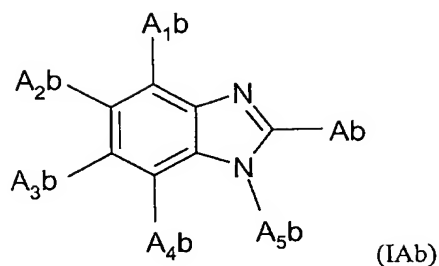
- A<sub>4a</sub> represents hydrogen or carboxyl or forms a ring with the adjacent member A<sub>3a</sub>
- A<sub>2a</sub> represents a carboxyl radical that is free, salified, esterified with an optionally substituted alkyl radical or an amidated carboxyl as indicated above or below,
- A<sub>2a</sub> and A<sub>3a</sub> represent two optionally substituted alkyl radicals,

30 A<sub>5</sub> represents hydrogen.

One subject of the present invention is, even more particularly, the compounds of formula (I) as defined above, corresponding to the formula (IAb):



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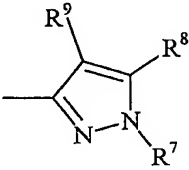
- in which Ab represents a pyrazolyl or indazolyl radical optionally substituted with one or more radicals
- 5 chosen from halogen atoms and alkyl, alkoxy and thienyl radicals,
- A<sub>1</sub>b, A<sub>2</sub>b, A<sub>3</sub>b and A<sub>4</sub>b, which may be identical or different, are chosen from a hydrogen atom, halogen atoms, hydroxyl, alkyl and alkoxy, nitro, cyano, phenyl and phenoxy radicals, and a carboxyl radical that is free, salified, esterified with an alkyl radical or amidated with a radical NA<sup>6</sup>bA<sup>7</sup>b such that either A<sup>6</sup>b and A<sup>7</sup>b, which may be identical or different, are chosen from alkyl, phenyl, phenylalkyl,
- 10 cycloalkylalkyl, cycloalkyl and furylalkyl radicals, or A<sup>6</sup>b and A<sup>7</sup>b form, together with the nitrogen atom to which they are attached, a pyrrolidinyl, morpholino or piperazinyl radical optionally substituted on the second nitrogen atom with an alkyl radical,
- it being understood that two consecutive radicals from among A<sub>1</sub>b, A<sub>2</sub>b, A<sub>3</sub>b and A<sub>4</sub>b may form, with the benzimidazole radical to which they are attached, an optionally substituted
- 15 4,5-ethylenedioxybenzimidazole radical or 4,5-methylenedioxybenzimidazole radical,
- A<sub>5</sub>b represents a hydrogen atom,
- the phenyl and phenoxy radicals above being optionally substituted with one or more radicals chosen from halogen atoms and hydroxyl, cyano, alkyl, alkoxy, amino, alkylamino, dialkylamino, phenylamino, phenylalkylamino and free, salified or esterified carboxyl radicals,
- 20 all the alkyl, alkoxy and alkylthio radicals above being linear or branched and containing not more than 4 carbon atoms,
- the said compounds of formula (IAb) being in any possible racemic, enantiomeric or diastereoisomeric isomer form, and also the addition salts with mineral and organic acids or with mineral and organic bases of the said compounds of formula (IAb).

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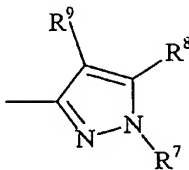
With reference to formula (Ix) above, the following are particular and preferred groupings:

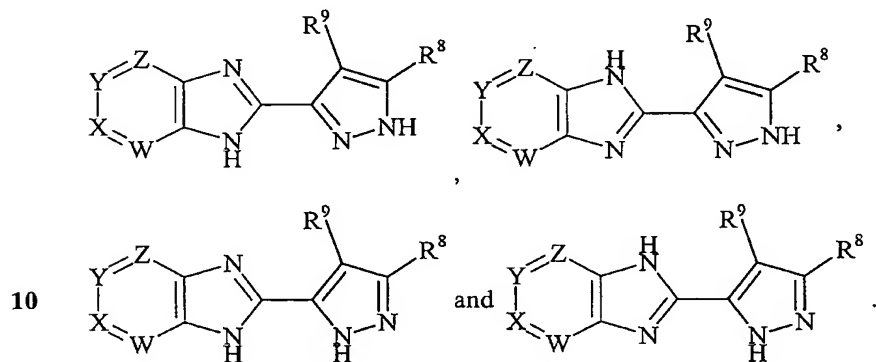
- R<sup>1</sup> may particularly represent optionally substituted heteroaryl. Exemplary optionally substituted heteroaryls include dihydrofuropyrazolyl, imidazolyl, indazolyl, indolyl, isoxazolyl,
- 30 oxodihydropyridazinyl, oxodihydropyridinopyrazolyl, oxodihydropyridinyl, oxotetrahydropyrrolopyrazolyl, pyrazolyl, thiazolyl, thienopyrazolyl, tetrahydrocyclopentapyrazolyl,

tetrahydroindazolyl, tetrahydropyranopyrazolyl, tetrahydropyridinopyrazolyl, tetrahydropyrrolopyrazolyl or triazolyl. Optional substituents include one or more groups selected from carboxy, cyano, halo, haloalkyl, hydroxy, nitro,  $R^4$ ,  $-C(=O)R^4$ ,  $-C(=O)NY^1Y^2$ ,  $-C(=O)OR^4$ ,  $-N(R^6)C(=O)R^4$ ,  $-N(R^6)C(=O)NY^1Y^2$ ,  $-N(R^6)C(=O)OR^4$ ,  $-N(R^6)SO_2R^4$ ,  $-N(R^6)SO_2NY^1Y^2$ ,  
 5  $-NY^1Y^2$ ,  $-OR^4$ ,  $-OCF_2H$ ,  $-OCF_3$ ,  $-OC(=O)R^4$ ,  $-OC(=O)NY^1Y^2$ ,  $-S(O)_nR^4$  and  $-S(O)_2NY^1Y^2$ .  $R^1$

more preferably represents a heteroaryl moiety  in which  $R^7$ ,  $R^8$  and  $R^9$  are as

hereinbefore defined. It will be appreciated that compounds of formula (Ix) in which  $R^1$  represents a

heteroaryl moiety  and  $R^7$  is hydrogen can exist in the tautomeric forms



W may particularly represent CH when X is  $CR^2$ , Y is CH or  $CR^3$  and Z are CH or  $CR^3$ .

W may also particularly represent CH when X is N, Y is CH or  $CR^3$  and Z is CH or  $CR^3$ .

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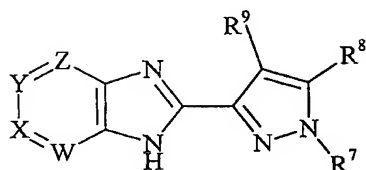
W may also particularly represent N when X is CH or  $CR^2$ , Y is CH or  $CR^3$  and Z is CH or  $CR^3$ .

W may also particularly represent N when X is CH or  $CR^2$ , Y is CH or  $CR^3$  and Z is N.

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It is to be understood that this invention covers all appropriate combinations of the particular and preferred groupings referred to herein.

A particular group of compounds of the invention are compounds of formula (Ixa):-



(Ixa)

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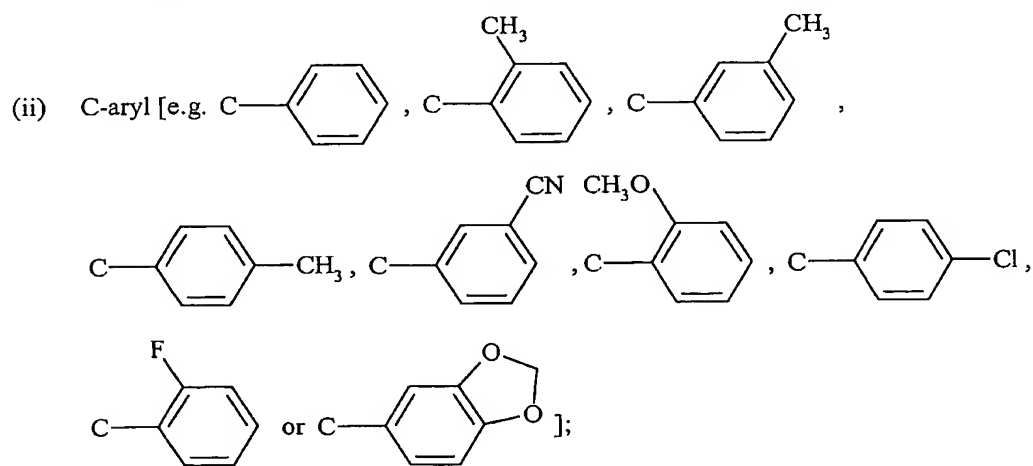
in which W, X, Y, Z and R<sup>7</sup> are as hereinbefore defined for compounds of formula (Ix), and R<sup>8</sup> and R<sup>9</sup> are independently selected from hydrogen, carboxy, cyano, halo, haloalkyl, hydroxy, nitro, R<sup>4</sup>,

- 10 -C(=O)R<sup>4</sup>, -C(=O)NY<sup>1</sup>Y<sup>2</sup>, -C(=O)OR<sup>4</sup>, -N(R<sup>6</sup>)C(=O)R<sup>4</sup>, -N(R<sup>6</sup>)C(=O)NY<sup>1</sup>Y<sup>2</sup>, -N(R<sup>6</sup>)C(=O)OR<sup>4</sup>, -N(R<sup>6</sup>)SO<sub>2</sub>R<sup>4</sup>, -NY<sup>1</sup>Y<sup>2</sup>, -OR<sup>4</sup>, -OC(=O)R<sup>4</sup>, -OC(=O)NY<sup>1</sup>Y<sup>2</sup>, -S(O)<sub>n</sub>R<sup>4</sup> and -S(O)<sub>2</sub>NY<sup>1</sup>Y<sup>2</sup>; and their corresponding N-oxides, and their prodrugs, and their acid bioisosteres; and pharmaceutically acceptable salts and solvates (e.g. hydrates) of compounds of formula (Ixa) and their N-oxides and their prodrugs, and their acid bioisosteres.

- 15 Compounds of formula (Ixa) in which W represents CH, X represents CH, Y represents CH and Z represents CH or C-CH<sub>3</sub> are preferred.

Compounds of formula (Ixa) in which W represents CH, X represents CH, Z represents CH and Y represents:

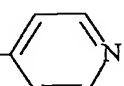
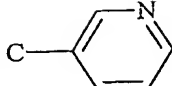
- 20 (i) C-C<sub>1-4</sub>alkyl [e.g. C-CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>2</sub>CH<sub>3</sub> or C-CH(CH<sub>3</sub>)<sub>2</sub>];




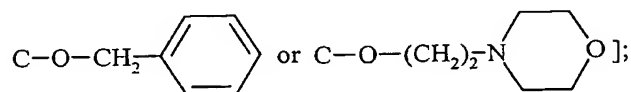

- (iii) C-CN;

(iv) C-NO<sub>2</sub>;

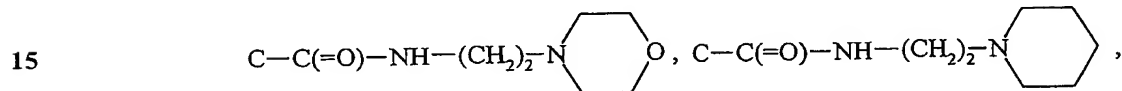
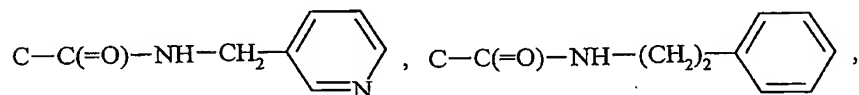
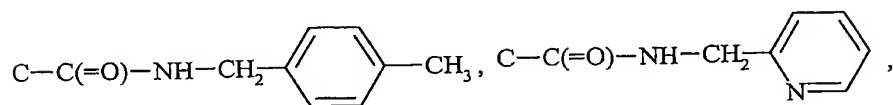
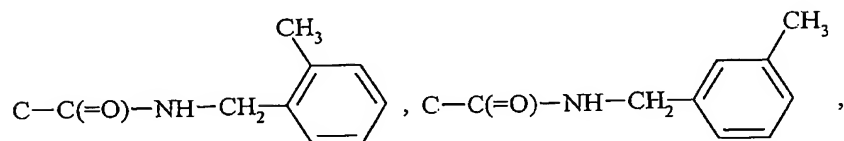
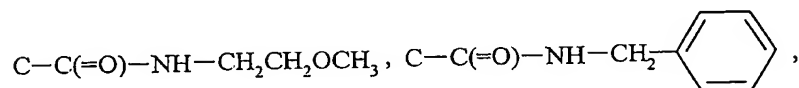
(v) C-halo [e.g. C-Br, C-Cl or C-F];

(vi) C-haloalkyl [e.g. C-CF<sub>3</sub>];(vii) C-heteroaryl [e.g. C-N or C-];

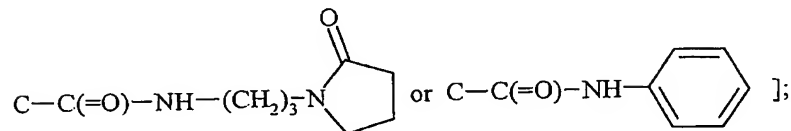
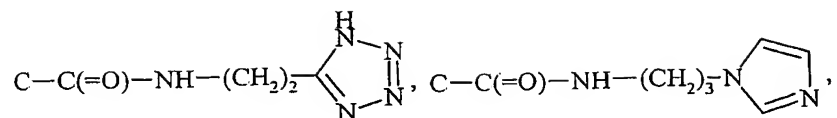
5 (viii) C-OR<sup>4</sup> [e.g. C-OCH<sub>3</sub>, C-OCH<sub>2</sub>CH<sub>3</sub>, C-OCHF<sub>2</sub>, C-OCF<sub>3</sub>, C-O-,

(ix) C-C(=O)R<sup>4</sup> [e.g. C-C(=O)-];(x) C-C(=O)NY<sup>1</sup>Y<sup>2</sup> [e.g. C-C(=O)-NH-CH<sub>3</sub>, C-C(=O)-N(CH<sub>3</sub>)<sub>2</sub>,C-C(=O)-NH-CH<sub>2</sub>CH<sub>3</sub>, C-C(=O)-NH-CH(CH<sub>3</sub>)<sub>2</sub>,

10 C-C(=O)-NH-C(CH<sub>3</sub>)<sub>2</sub>-CH<sub>2</sub>OH, C-C(=O)-NH-CH<sub>2</sub>CH<sub>2</sub>CN,

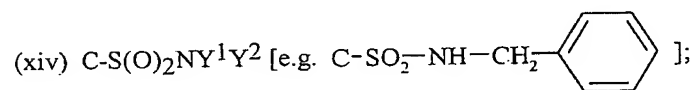
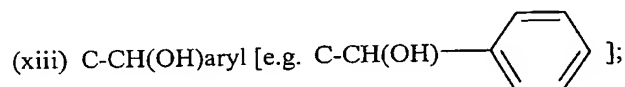
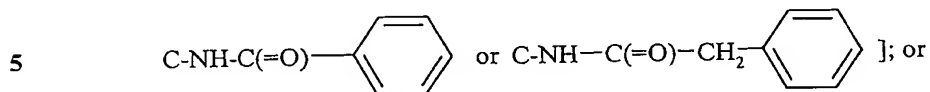


-45-



(xi)  $\text{C}-\text{C}(=\text{O})\text{OR}^4$  [e.g.  $\text{C}-\text{C}(=\text{O})\text{OH}$  or  $\text{C}-\text{C}(=\text{O})\text{OCH}_3$ ];

(xii)  $\text{C}-\text{NHC}(=\text{O})\text{R}^4$  [e.g.  $\text{C}-\text{NHC}(=\text{O})\text{CH}_3$ ,  $\text{C}-\text{NHC}(=\text{O})\text{CH}(\text{CH}_3)_2$ ,

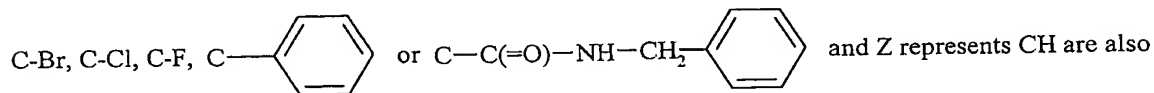


(xv)  $\text{C}-\text{S}(\text{O})_n\text{R}^4$  [e.g.  $\text{C}-\text{SO}_2\text{CH}_3$ ];

are also preferred.

10

Compounds of formula (Ixa) in which W represents CH, X represents  $\text{C}-\text{CH}_3$ ,  $\text{C}-\text{CH}_2\text{CH}_3$ ,  $\text{C}-\text{CH}(\text{CH}_3)_2$ ,  $\text{C}-\text{OCH}_3$ ,  $\text{C}-\text{OCH}_2\text{CH}_3$ , C-Br or C-Cl, Y represents  $\text{C}-\text{CH}_3$ ,  $\text{C}-\text{CH}_2\text{CH}_3$ ,  $\text{C}-\text{OCH}_3$ ,



preferred.

15

Compounds of formula (Ixa) in which W represents CH, X represents CH, Y represents  $\text{C}-\text{CH}_3$  and Z represents  $\text{C}-\text{CH}_3$  are also preferred.

Compounds of formula (Ixa) in which W represents CH, X represents  $\text{CR}^2$  and Y represents  $\text{CR}^3$


20 where  $\text{R}^2$  and  $\text{R}^3$  form the group  $-\text{CH}_2-\text{O}-\text{CH}_2-$ , and Z represents CH are also preferred.

Compounds of formula (Ixa) in which W represents CH, X represents CR<sup>2</sup> and Y represents CR<sup>3</sup> where R<sup>2</sup> and R<sup>3</sup> form the group -CH<sub>2</sub>-CH<sub>2</sub>-CH<sub>2</sub>-, and Z represents CH are also preferred.

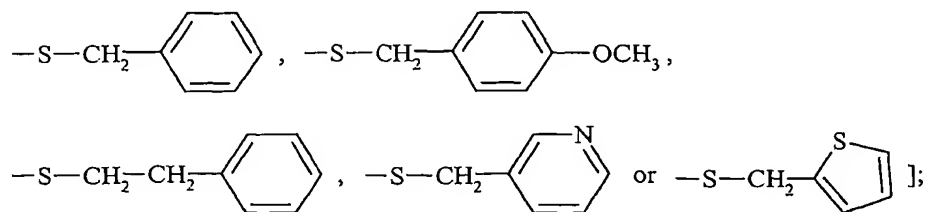
Compounds of formula (Ixa) in which R<sup>7</sup> represents hydrogen are preferred.

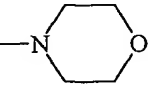
5

Compounds of formula (Ixa) in which R<sup>8</sup> represents:

- (i) hydrogen;
- (ii) C<sub>1-4</sub>alkyl [e.g. CH<sub>3</sub>, CH<sub>2</sub>CH<sub>3</sub>, CH(CH<sub>3</sub>)<sub>2</sub> or CH(CH<sub>3</sub>)CH<sub>2</sub>CH<sub>3</sub>];
- (iii) -SR<sup>4</sup> [e.g. -S-CH<sub>3</sub>, -S-CH<sub>2</sub>CH<sub>3</sub> or -S-CH<sub>2</sub>-,

10



- (iv) -NY<sup>1</sup>Y<sup>2</sup> [e.g. -NO]; or

- (v) -OR<sup>5</sup> [e.g. -OCH<sub>2</sub>CH<sub>3</sub>]

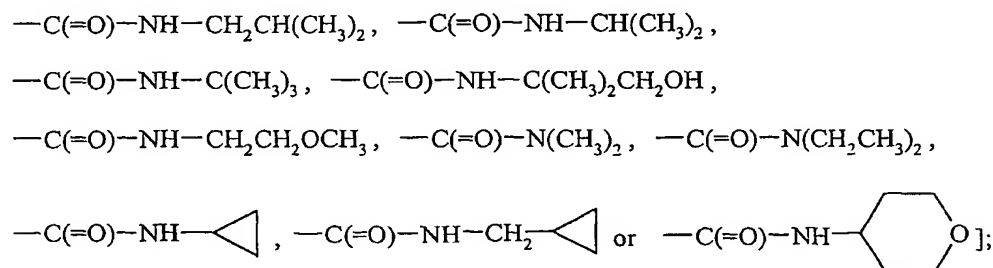
are preferred.

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Compounds of formula (Ixa) in which R<sup>9</sup> represents:

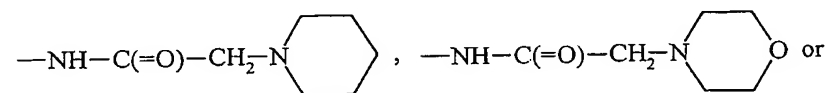
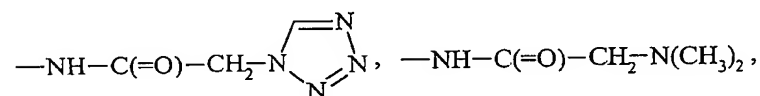
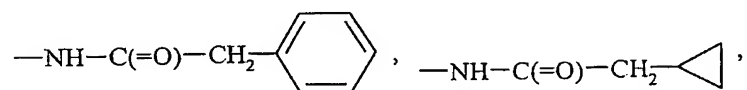
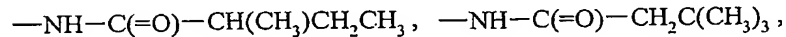
- (i) hydrogen;
- (ii) C<sub>1-7</sub>alkyl [e.g. -CH<sub>3</sub>, -CH<sub>2</sub>CH<sub>2</sub>CH<sub>3</sub>, -CH(CH<sub>3</sub>)<sub>2</sub> or -CH<sub>2</sub>-CH<sub>2</sub>-CH(CH<sub>3</sub>)<sub>2</sub>];
- (iii) aryl [e.g. phenyl];
- (iv) -C(=O)NY<sup>1</sup>Y<sup>2</sup> [e.g. -C(=O)-NH-CH<sub>2</sub>CH<sub>3</sub>, -C(=O)-NH-CH<sub>2</sub>CH<sub>2</sub>CH<sub>3</sub>,

20

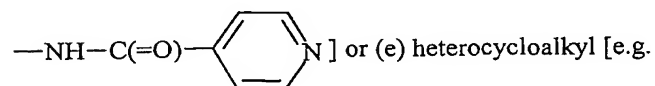
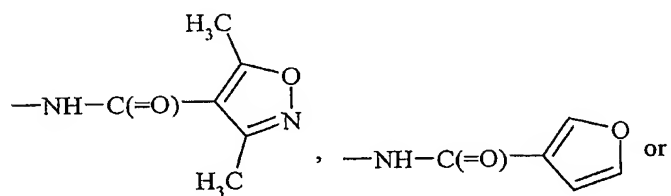
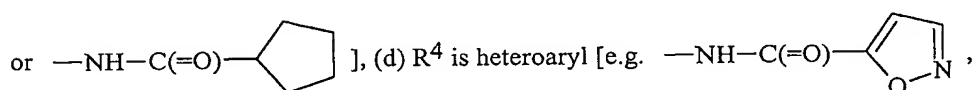
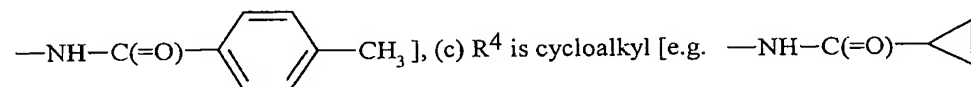
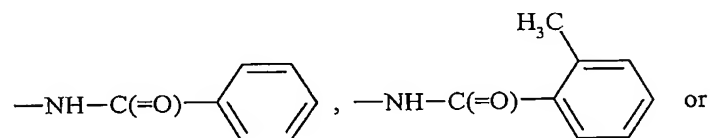


- (v)  $-N(R^6)C(=O)R^4$ , particularly  $-NHC(=O)R^4$ , in which (a)  $R^4$  is alkyl optionally substituted by aryl, cycloalkyl, heteroaryl, heterocycloalkyl,  $NY^1Y^2$  or  $-OR^5$  [e.g.  $-NH-C(=O)-CH_3$ ,  $-NH-C(=O)-(CH_2)_2CH_3$ ,  $-NH-C(=O)-CH(CH_3)_2$ ,  $-NH-C(=O)-C(CH_3)_3$ ,  $-NH-C(=O)-CH_2CH(CH_3)_2$ ,

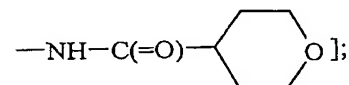
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- (vi)  $-N(R^6)C(=O)NY^1Y^2$ , particularly  $-NHC(=O)NY^1Y^2$  [e.g.  $-\text{NH}-C(=O)-\text{NHCH}_3$ ,  
 $-\text{NH}-C(=O)-\text{NHCH}_2\text{CH}_3$ ,  $-\text{NH}-C(=O)-\text{NHCH}(\text{CH}_3)_2$ ,  
 $-\text{NH}-C(=O)-\text{NHCH}_2\text{CH}(\text{CH}_3)_2$ ,  $-\text{NH}-C(=O)-\text{NHC}(\text{CH}_3)_3$ ,  
 $-\text{NH}-C(=O)-\text{N}(\text{CH}_3)_2$ ,  $-\text{NH}-C(=O)-\text{N}(\text{CH}_2\text{CH}_3)_2$ ,  
 $-\text{NH}-C(=O)-\text{NH}-\triangle$ ,  $-\text{NH}-C(=O)-\text{NH}-\text{CH}_2-\triangle$ ,  
 $-\text{NH}-C(=O)-\text{NH}-\text{CH}_2-\text{C}_6\text{H}_5$ ,  $-\text{NH}-C(=O)-\text{NH}-\text{C}_6\text{H}_5$ ,  
 $-\text{NH}-C(=O)-\text{N}-\text{C}_6\text{H}_{11}$ ,  $-\text{NH}-C(=O)-\text{N}-\text{C}_6\text{H}_{11}-\text{N}-\text{CH}_3$  or  
 $-\text{NH}-C(=O)-\text{N}-\text{C}_6\text{H}_{11}-\text{O}$ ];
- (vii)  $-NY^1Y^2$  [e.g.  $-\text{NH}_2$ ]; or
- (viii) alkyl substituted by  $-N(R^6)C(=O)NY^1Y^2$  [e.g.  $-\text{CH}_2-\text{NH}-C(=O)-\text{CH}(\text{CH}_3)_2$  or  
 $-\text{CH}_2-\text{NH}-C(=O)-\text{N}-\text{C}_6\text{H}_{11}-\text{O}$ ];
- are preferred.
- A preferred group of compounds of the invention are compounds of formula (Ixa) in which:- W  
represents CH; X represents CH; Y represents CH; Z represents CH or C-CH<sub>3</sub>; R<sup>7</sup> represents  
hydrogen; R<sup>8</sup> represents (i) hydrogen, (ii) C<sub>1-4</sub>alkyl [e.g. CH<sub>3</sub>, CH<sub>2</sub>CH<sub>3</sub>, CH(CH<sub>3</sub>)<sub>2</sub> or  
CH(CH<sub>3</sub>)CH<sub>2</sub>CH<sub>3</sub>], (iii) -SR<sup>4</sup> [e.g.  $-\text{S}-\text{CH}_3$ ,  $-\text{S}-\text{CH}_2\text{CH}_3$  or  $-\text{S}-\text{CH}_2-\triangle$ ,  
 $-\text{S}-\text{CH}_2-\text{C}_6\text{H}_5$ ,  $-\text{S}-\text{CH}_2-\text{C}_6\text{H}_4-\text{OCH}_3$ ,  $-\text{S}-\text{CH}_2-\text{CH}_2-\text{C}_6\text{H}_5$ ,  
 $-\text{S}-\text{CH}_2-\text{C}_5\text{H}_4\text{N}$  or  $-\text{S}-\text{CH}_2-\text{C}_4\text{H}_3\text{S}$ ], (iv)  $-NY^1Y^2$  [e.g.  $-\text{N}-\text{C}_6\text{H}_{11}-\text{O}$ ] or (v) -OR<sup>5</sup>  
[e.g.  $-\text{OCH}_2\text{CH}_3$ ]; R<sup>9</sup> represents (i) hydrogen; (ii) C<sub>1-7</sub>alkyl [e.g.  $-\text{CH}_3$ ,  $-\text{CH}_2\text{CH}_2\text{CH}_3$ ,  $-\text{CH}(\text{CH}_3)_2$   
or  $-\text{CH}_2-\text{CH}_2-\text{CH}(\text{CH}_3)_2$ ]; (iii) aryl [e.g. phenyl]; (iv)  $-C(=O)NY^1Y^2$  [e.g.



$-\text{C}(=\text{O})-\text{NH}-\text{CH}_2\text{CH}_3$ ,  $-\text{C}(=\text{O})-\text{NH}-\text{CH}_2\text{CH}_2\text{CH}_3$ ,  $-\text{C}(=\text{O})-\text{NH}-\text{CH}_2\text{CH}(\text{CH}_3)_2$ ,  
 $-\text{C}(=\text{O})-\text{NH}-\text{CH}(\text{CH}_3)_2$ ,  $-\text{C}(=\text{O})-\text{NH}-\text{C}(\text{CH}_3)_3$ ,  $-\text{C}(=\text{O})-\text{NH}-\text{C}(\text{CH}_3)_2\text{CH}_2\text{OH}$ ,  
 $-\text{C}(=\text{O})-\text{NH}-\text{CH}_2\text{CH}_2\text{OCH}_3$ ,  $-\text{C}(=\text{O})-\text{N}(\text{CH}_3)_2$ ,  $-\text{C}(=\text{O})-\text{N}(\text{CH}_2\text{CH}_3)_2$ ,

$-\text{C}(=\text{O})-\text{NH}-\triangle$ ,  $-\text{C}(=\text{O})-\text{NH}-\text{CH}_2-\triangle$  or  $-\text{C}(=\text{O})-\text{NH}-\text{C}_6\text{H}_{10}\text{O}$ ;

5 (v)  $-\text{N}(\text{R}^6)\text{C}(=\text{O})\text{R}^4$ , particularly  $-\text{NHC}(=\text{O})\text{R}^4$ , in which (a)  $\text{R}^4$  is alkyl optionally substituted by aryl, cycloalkyl, heteroaryl, heterocycloalkyl,  $\text{NY}^1\text{Y}^2$  or  $-\text{OR}^5$  [e.g.  $-\text{NH}-\text{C}(=\text{O})-\text{CH}_3$ ,

$-\text{NH}-\text{C}(=\text{O})-(\text{CH}_2)_2\text{CH}_3$ ,  $-\text{NH}-\text{C}(=\text{O})-\text{CH}(\text{CH}_3)_2$ ,  $-\text{NH}-\text{C}(=\text{O})-\text{C}(\text{CH}_3)_3$ ,  
 $-\text{NH}-\text{C}(=\text{O})-\text{CH}_2\text{CH}(\text{CH}_3)_2$ ,  $-\text{NH}-\text{C}(=\text{O})-\text{CH}(\text{CH}_3)\text{CH}_2\text{CH}_3$ ,

$-\text{NH}-\text{C}(=\text{O})-\text{CH}_2\text{C}(\text{CH}_3)_3$ ,  $-\text{NH}-\text{C}(=\text{O})-\text{CH}_2-\text{C}_6\text{H}_5$ ,  $-\text{NH}-\text{C}(=\text{O})-\text{CH}_2-\triangle$ ,

10  $-\text{NH}-\text{C}(=\text{O})-\text{CH}_2-\text{N} \begin{array}{c} \diagup \text{N} \diagdown \\ \diagdown \text{N} \diagup \end{array}$ ,  $-\text{NH}-\text{C}(=\text{O})-\text{CH}_2-\text{N}(\text{CH}_3)_2$ ,

$-\text{NH}-\text{C}(=\text{O})-\text{CH}_2-\text{N} \text{C}_6\text{H}_{10}$ ,  $-\text{NH}-\text{C}(=\text{O})-\text{CH}_2-\text{N} \text{C}_6\text{H}_{10}\text{O}$  or

$-\text{NH}-\text{C}(=\text{O})-\text{CH}_2\text{OCH}_3$ ], (b)  $\text{R}^4$  is aryl [e.g.

$-\text{NH}-\text{C}(=\text{O})-\text{C}_6\text{H}_5$ ,  $-\text{NH}-\text{C}(=\text{O})-\text{C}_6\text{H}_4\text{CH}_3$  or  $-\text{NH}-\text{C}(=\text{O})-\text{C}_6\text{H}_4\text{CH}_3$ ],

(c)  $\text{R}^4$  is cycloalkyl [e.g.  $-\text{NH}-\text{C}(=\text{O})-\triangle$  or  $-\text{NH}-\text{C}(=\text{O})-\text{C}_4\text{H}_7$ ], (d)  $\text{R}^4$  is heteroaryl



15 [e.g.  $-\text{NH}-\text{C}(=\text{O})-\text{C}_4\text{H}_3\text{NO}$ ,  $-\text{NH}-\text{C}(=\text{O})-\text{C}_4\text{H}_2\text{N}_2\text{O}$ ,  $-\text{NH}-\text{C}(=\text{O})-\text{C}_4\text{H}_3\text{NO}$  or



$-\text{NH}-\text{C}(=\text{O})-\text{C}_5\text{H}_4\text{N}$ ] or (e) heterocycloalkyl [e.g.  $-\text{NH}-\text{C}(=\text{O})-\text{C}_6\text{H}_{10}\text{O}$ ];


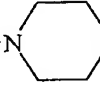
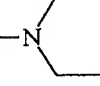
(vi)  $-N(R^6)C(=O)NY^1Y^2$ , particularly  $-NHC(=O)NY^1Y^2$  [e.g.  $-NH-C(=O)-NHCH_3$ ,

$-NH-C(=O)-NHCH_2CH_3$ ,  $-NH-C(=O)-NHCH(CH_3)_2$ ,

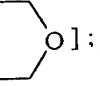
$-NH-C(=O)-NHCH_2CH(CH_3)_2$ ,  $-NH-C(=O)-NHC(CH_3)_3$ ,  $-NH-C(=O)-N(CH_3)_2$ ,

$-NH-C(=O)-N(CH_2CH_3)_2$ ,  $-NH-C(=O)-NH$  ,  $-NH-C(=O)-NH-CH_2$  ,

5  $-NH-C(=O)-NH-CH_2$  ,  $-NH-C(=O)-NH$  ,

$-NH-C(=O)-N$  ,  $-NH-C(=O)-N$    $-CH_3$  or  $-NH-C(=O)-N$  ],


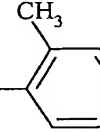
(vii)  $-NY^1Y^2$  [e.g.  $-NH_2$ ] or (viii) alkyl substituted by  $-N(R^6)C(=O)NY^1Y^2$  [e.g.  $-CH_2-NH-C(=O)-$

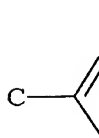

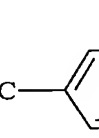
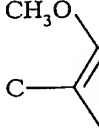
$CH(CH_3)_2$  or  $-CH_2-NH-C(=O)-N$  ]; and their corresponding N-oxides, and their


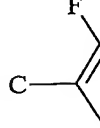
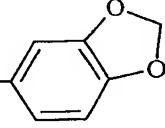
prodrugs, and their acid bioisosteres; and pharmaceutically acceptable salts and solvates (e.g. hydrates)

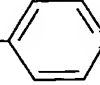
10 of compounds of formula (Ixa) and their N-oxides and their prodrugs, and their acid bioisosteres.

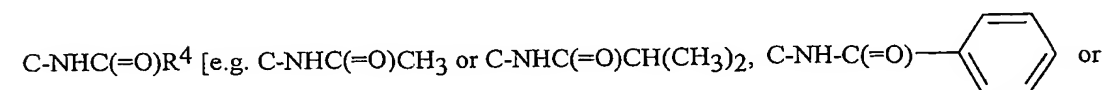
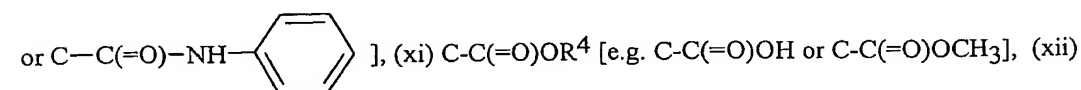
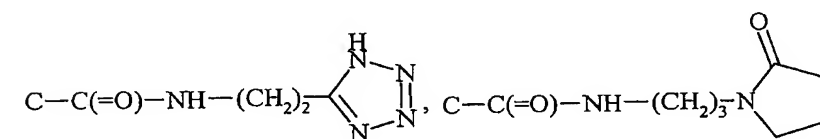
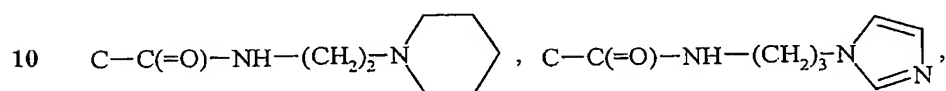
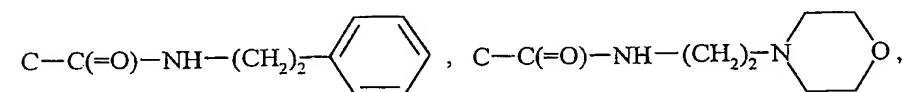
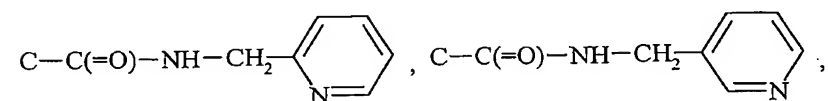
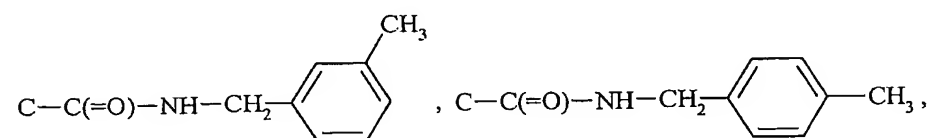
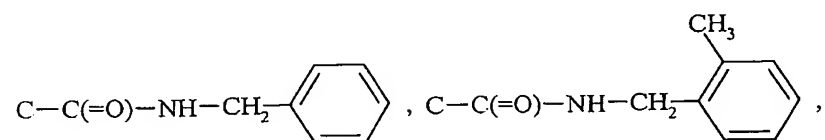
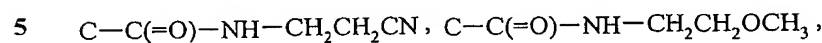
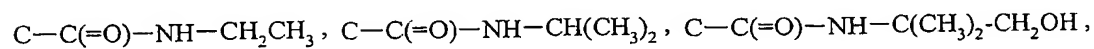
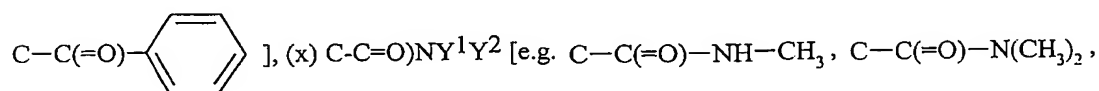
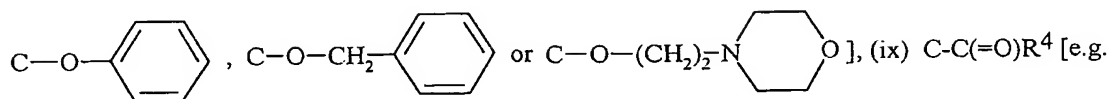
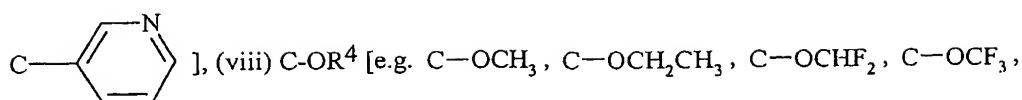
A further preferred group of compounds of the invention are compounds of formula (Ixa) in which:- W represents CH; X represents CH; Z represents CH; Y represents (i) C-C<sub>1-4</sub>alkyl [e.g. C-CH<sub>3</sub>,

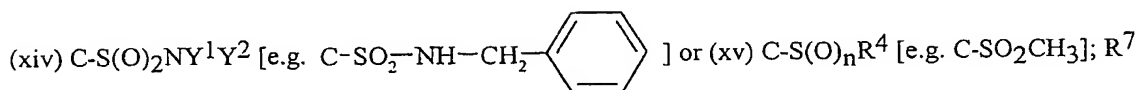
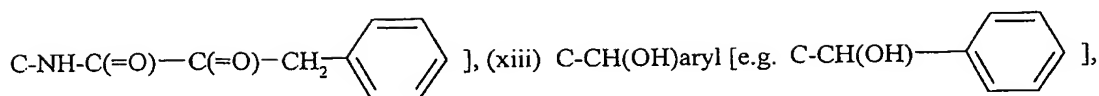
C-CH<sub>2</sub>CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>2</sub>CH<sub>3</sub> or C-CH(CH<sub>3</sub>)<sub>2</sub>], (ii) C-aryl [e.g. C-, C-,

15 C-, C-, C-, C-,

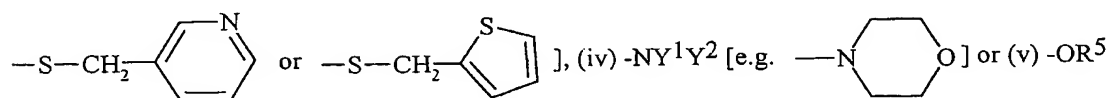
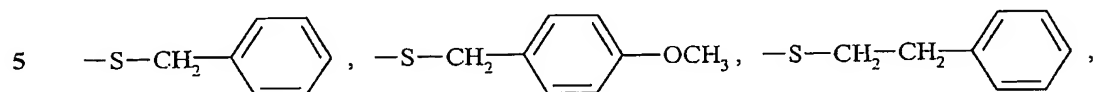
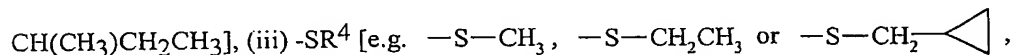
C-, C- or C-, (iii) C-CN, (iv) C-NO<sub>2</sub>, (v) C-halo

[e.g. C-Br, C-Cl or C-F], (vi) C-haloalkyl [e.g. C-CF<sub>3</sub>], (vii) C-heteroaryl [e.g. C- or



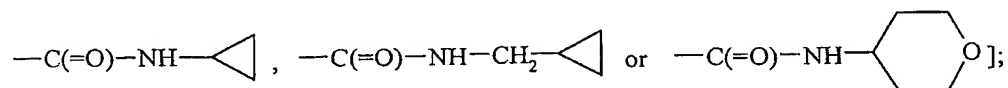
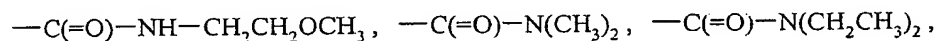
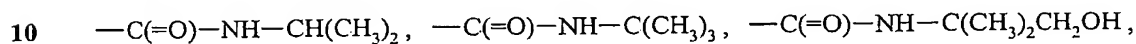
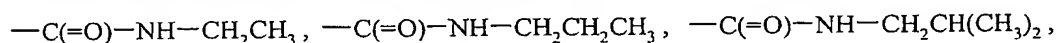


represents hydrogen; R<sup>8</sup> represents (i) hydrogen, (ii) C<sub>1-4</sub>alkyl [e.g. CH<sub>3</sub>, CH<sub>2</sub>CH<sub>3</sub>, CH(CH<sub>3</sub>)<sub>2</sub> or

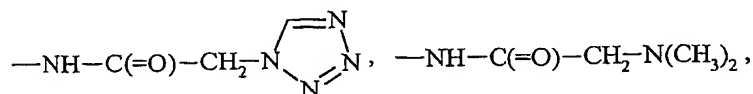
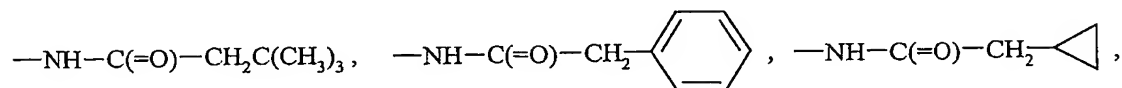
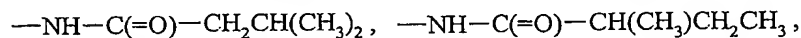
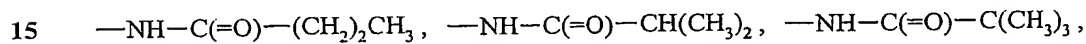


[e.g. -OCH<sub>2</sub>CH<sub>3</sub>]; R<sup>9</sup> represents (i) hydrogen; (ii) C<sub>1-7</sub>alkyl [e.g. -CH<sub>3</sub>, -CH<sub>2</sub>CH<sub>2</sub>CH<sub>3</sub>, -CH(CH<sub>3</sub>)<sub>2</sub>

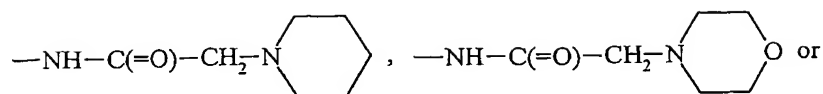
or -CH<sub>2</sub>-CH<sub>2</sub>-CH(CH<sub>3</sub>)<sub>2</sub>]; (iii) aryl [e.g. phenyl]; (iv) -C(=O)NY<sup>1</sup>Y<sup>2</sup> [e.g.



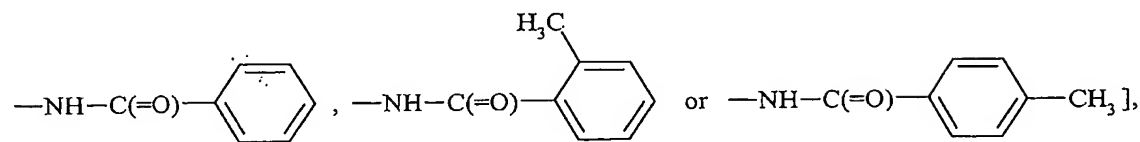
(v) -N(R<sup>6</sup>)C(=O)R<sup>4</sup>, particularly -NHC(=O)R<sup>4</sup>, in which (a) R<sup>4</sup> is alkyl optionally substituted by aryl, cycloalkyl, heteroaryl, heterocycloalkyl, NY<sup>1</sup>Y<sup>2</sup> or -OR<sup>5</sup> [e.g. -NH-C(=O)-CH<sub>3</sub>,



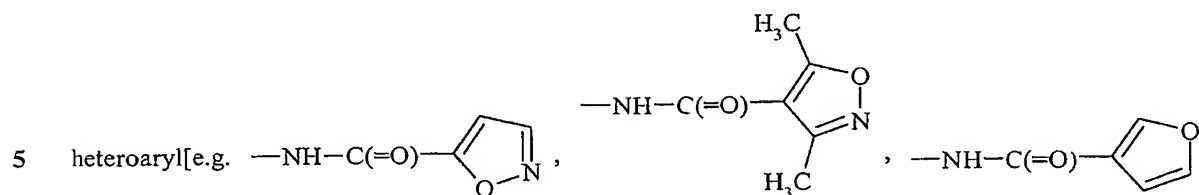
-53-



$-\text{NH}-\text{C}(=\text{O})-\text{CH}_2\text{OCH}_3$  ], (b)  $\text{R}^4$  is aryl [e.g.



(c)  $\text{R}^4$  is cycloalkyl [e.g.  $-\text{NH}-\text{C}(=\text{O})-\text{C}_3\text{H}_5$  or  $-\text{NH}-\text{C}(=\text{O})-\text{C}_5\text{H}_9$  ], (d)  $\text{R}^4$  is



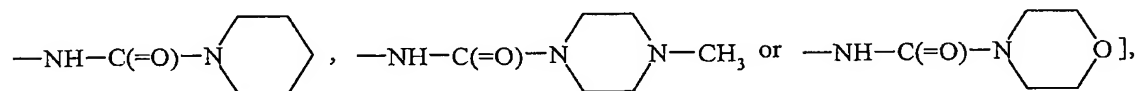
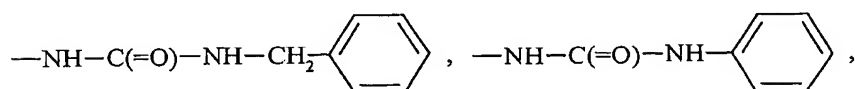
or  $-\text{NH}-\text{C}(=\text{O})-\text{C}_6\text{H}_4\text{N}$  ] or (e) heterocycloalkyl [e.g.  $-\text{NH}-\text{C}(=\text{O})-\text{C}_6\text{H}_9\text{O}$ ];

(vi)  $-\text{N}(\text{R}^6)\text{C}(=\text{O})\text{NY}^1\text{Y}^2$ , particularly  $-\text{NHC}(=\text{O})\text{NY}^1\text{Y}^2$  [e.g.  $-\text{NH}-\text{C}(=\text{O})-\text{NHCH}_3$ ,

$-\text{NH}-\text{C}(=\text{O})-\text{NHCH}_2\text{CH}_3$ ,  $-\text{NH}-\text{C}(=\text{O})-\text{NHCH}(\text{CH}_3)_2$ ,

$-\text{NH}-\text{C}(=\text{O})-\text{NHCH}_2\text{CH}(\text{CH}_3)_2$ ,  $-\text{NH}-\text{C}(=\text{O})-\text{NHC}(\text{CH}_3)_3$ ,  $-\text{NH}-\text{C}(=\text{O})-\text{N}(\text{CH}_3)_2$ ,

10  $-\text{NH}-\text{C}(=\text{O})-\text{N}(\text{CH}_2\text{CH}_3)_2$ ,  $-\text{NH}-\text{C}(=\text{O})-\text{NH}-\text{C}_3\text{H}_5$ ,  $-\text{NH}-\text{C}(=\text{O})-\text{NH}-\text{CH}_2-\text{C}_3\text{H}_5$ ,




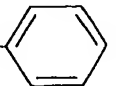
(vii)  $-\text{NY}^1\text{Y}^2$  [e.g.  $-\text{NH}_2$ ] or (viii) alkyl substituted by  $-\text{N}(\text{R}^6)\text{C}(=\text{O})\text{NY}^1\text{Y}^2$  [e.g.  $-\text{CH}_2-\text{NH}-\text{C}(=\text{O})-$

$\text{CH}(\text{CH}_3)_2$  or  $-\text{CH}_2-\text{NH}-\text{C}(=\text{O})-\text{N} \begin{array}{c} \diagup \quad \diagdown \\ \text{---} \quad \text{---} \end{array} \text{O} ]$ ; and their corresponding N-oxides, and their


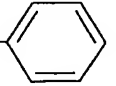
15 prodrugs, and their acid bioisosteres; and pharmaceutically acceptable salts and solvates (e.g. hydrates) of compounds of formula (Ixa) and their N-oxides and their prodrugs, and their acid bioisosteres.

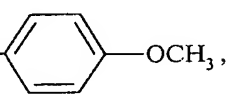
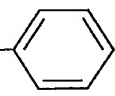
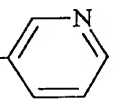
A further preferred group of compounds of the invention are compounds of formula (Ixa) in which:- W represents CH; X represents C-CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>3</sub>, C-CH(CH<sub>3</sub>)<sub>2</sub>, C-OCH<sub>3</sub>, C-OCH<sub>2</sub>CH<sub>3</sub>, C-Br or


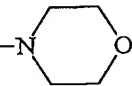
C-Cl; Y represents C-CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>3</sub>, C-OCH<sub>3</sub>, C-Br, C-Cl, C-F, C- or

C-C(=O)-NH-CH<sub>2</sub>-; Z represents CH; R<sup>7</sup> represents hydrogen; R<sup>8</sup> represents (i)

5 hydrogen, (ii) C<sub>1-4</sub>alkyl [e.g. CH<sub>3</sub>, CH<sub>2</sub>CH<sub>3</sub>, CH(CH<sub>3</sub>)<sub>2</sub> or CH(CH<sub>3</sub>)CH<sub>2</sub>CH<sub>3</sub>], (iii) -SR<sup>4</sup> [e.g.

-S-CH<sub>3</sub>, -S-CH<sub>2</sub>CH<sub>3</sub> or -S-CH<sub>2</sub>-, -S-CH<sub>2</sub>-,

-S-CH<sub>2</sub>-, -S-CH<sub>2</sub>-CH<sub>2</sub>-, -S-CH<sub>2</sub>- or

-S-CH<sub>2</sub>-], (iv) -NY<sup>1</sup>Y<sup>2</sup> [e.g. -NO] or (v) -OR<sup>5</sup> [e.g. -OCH<sub>2</sub>CH<sub>3</sub>]; R<sup>9</sup>


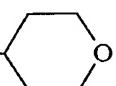
represents (i) hydrogen; (ii) C<sub>1-7</sub>alkyl [e.g. -CH<sub>3</sub>, -CH<sub>2</sub>CH<sub>2</sub>CH<sub>3</sub>, -CH(CH<sub>3</sub>)<sub>2</sub> or -CH<sub>2</sub>-CH<sub>2</sub>-

10 CH(CH<sub>3</sub>)<sub>2</sub>]; (iii) aryl [e.g. phenyl]; (iv) -C(=O)NY<sup>1</sup>Y<sup>2</sup> [e.g. -C(=O)-NH-CH<sub>2</sub>CH<sub>3</sub>,

-C(=O)-NH-CH<sub>2</sub>CH<sub>2</sub>CH<sub>3</sub>, -C(=O)-NH-CH<sub>2</sub>CH(CH<sub>3</sub>)<sub>2</sub>, -C(=O)-NH-CH(CH<sub>3</sub>)<sub>2</sub>,

-C(=O)-NH-C(CH<sub>3</sub>)<sub>3</sub>, -C(=O)-NH-C(CH<sub>3</sub>)<sub>2</sub>CH<sub>2</sub>OH, -C(=O)-NH-CH<sub>2</sub>CH<sub>2</sub>OCH<sub>3</sub>,

-C(=O)-N(CH<sub>3</sub>)<sub>2</sub>, -C(=O)-N(CH<sub>2</sub>CH<sub>3</sub>)<sub>2</sub>, -C(=O)-NH-,



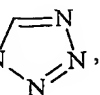
-C(=O)-NH-CH<sub>2</sub>- or -C(=O)-NH-O]; (v) -N(R<sup>6</sup>)C(=O)R<sup>4</sup>, particularly

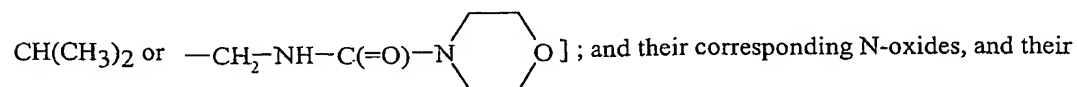
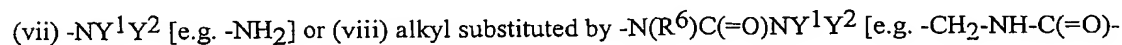
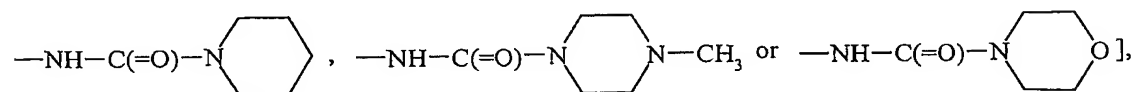
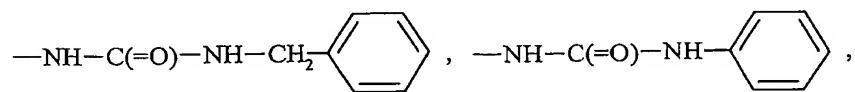
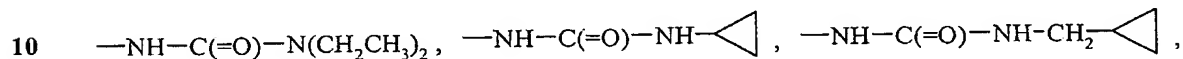
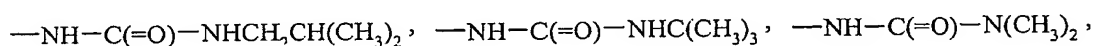
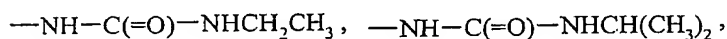
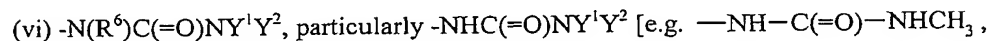
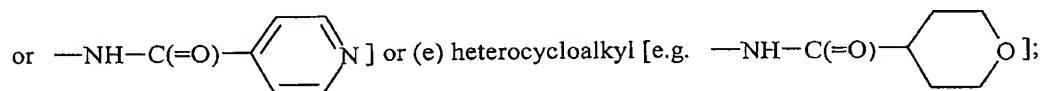
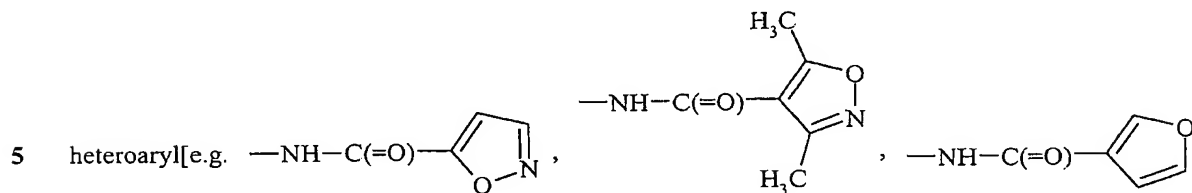
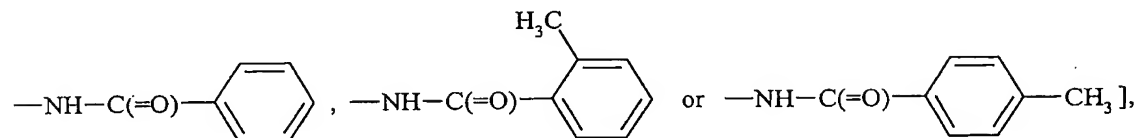
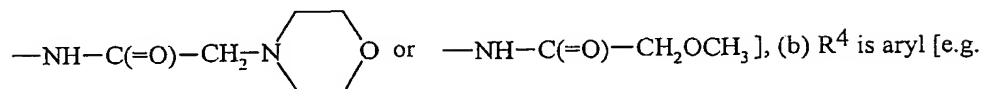
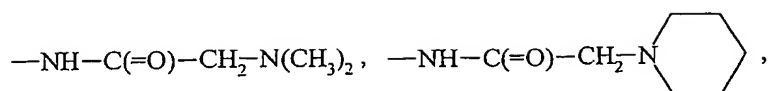
15 -NHC(=O)R<sup>4</sup>, in which (a) R<sup>4</sup> is alkyl optionally substituted by aryl, cycloalkyl, heteroaryl,

heterocycloalkyl, NY<sup>1</sup>Y<sup>2</sup> or -OR<sup>5</sup> [e.g. -NH-C(=O)-CH<sub>3</sub>, -NH-C(=O)-(CH<sub>2</sub>)<sub>2</sub>CH<sub>3</sub>,

-NH-C(=O)-CH(CH<sub>3</sub>)<sub>2</sub>, -NH-C(=O)-C(CH<sub>3</sub>)<sub>3</sub>, -NH-C(=O)-CH<sub>2</sub>CH(CH<sub>3</sub>)<sub>2</sub>,

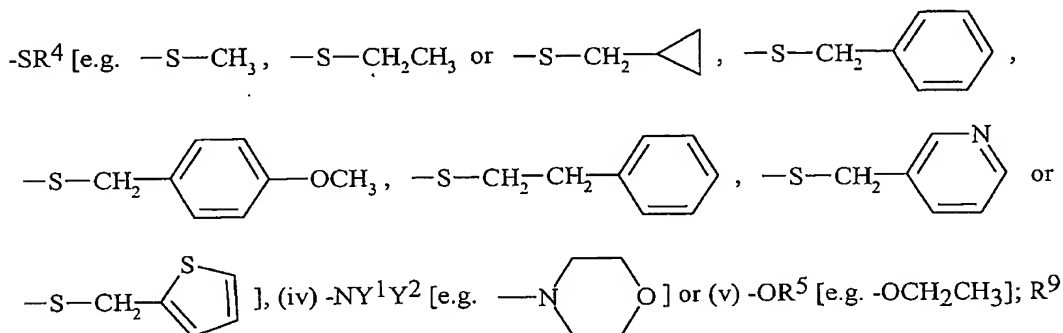
-NH-C(=O)-CH(CH<sub>3</sub>)CH<sub>2</sub>CH<sub>3</sub>, -NH-C(=O)-CH<sub>2</sub>C(CH<sub>3</sub>)<sub>3</sub>,

-NH-C(=O)-CH<sub>2</sub>-, -NH-C(=O)-CH<sub>2</sub>-, -NH-C(=O)-CH<sub>2</sub>-N,

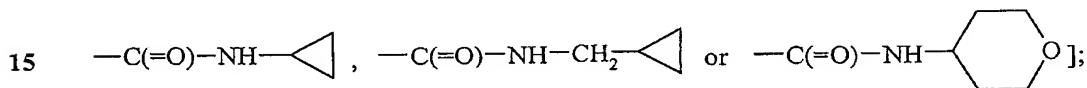


prodrugs, and their acid bioisosteres; and pharmaceutically acceptable salts and solvates (e.g. hydrates) of compounds of formula (Ixa) and their N-oxides and their prodrugs, and their acid bioisosteres.

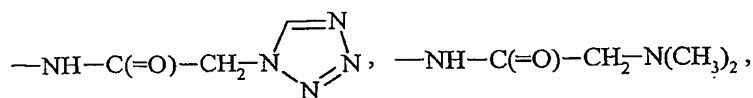
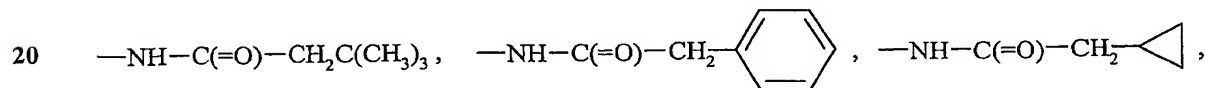
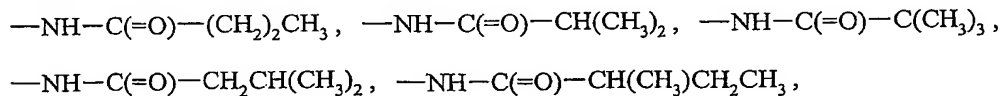
- A further preferred group of compounds of the invention are compounds of formula (Ixa) in which: -W  
 5 represents CH; X represents CH; Y represents C-CH<sub>3</sub>; Z represents C-CH<sub>3</sub>; R<sup>7</sup> represents hydrogen;  
 R<sup>8</sup> represents (i) hydrogen, (ii) C<sub>1-4</sub>alkyl [e.g. CH<sub>3</sub>, CH<sub>2</sub>CH<sub>3</sub>, CH(CH<sub>3</sub>)<sub>2</sub> or CH(CH<sub>3</sub>)CH<sub>2</sub>CH<sub>3</sub>], (iii)



- 10 represents (i) hydrogen; (ii) C<sub>1-7</sub>alkyl [e.g. -CH<sub>3</sub>, -CH<sub>2</sub>CH<sub>2</sub>CH<sub>3</sub>, -CH(CH<sub>3</sub>)<sub>2</sub> or -CH<sub>2</sub>-CH<sub>2</sub>-  
 CH(CH<sub>3</sub>)<sub>2</sub>]; (iii) aryl [e.g. phenyl]; (iv) -C(=O)NY<sup>1</sup>Y<sup>2</sup> [e.g.  
 -C(=O)-NH-CH<sub>2</sub>CH<sub>3</sub>, -C(=O)-NH-CH<sub>2</sub>CH<sub>2</sub>CH<sub>3</sub>, -C(=O)-NH-CH<sub>2</sub>CH(CH<sub>3</sub>)<sub>2</sub>,  
 -C(=O)-NH-CH(CH<sub>3</sub>)<sub>2</sub>, -C(=O)-NH-C(CH<sub>3</sub>)<sub>3</sub>, -C(=O)-NH-C(CH<sub>3</sub>)<sub>2</sub>CH<sub>2</sub>OH,  
 -C(=O)-NH-CH<sub>2</sub>CH<sub>2</sub>OCH<sub>3</sub>, -C(=O)-N(CH<sub>3</sub>)<sub>2</sub>, -C(=O)-N(CH<sub>2</sub>CH<sub>3</sub>)<sub>2</sub>,

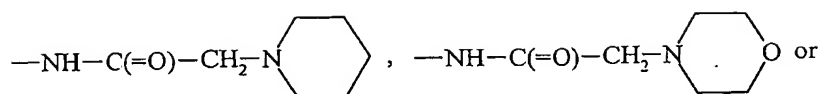
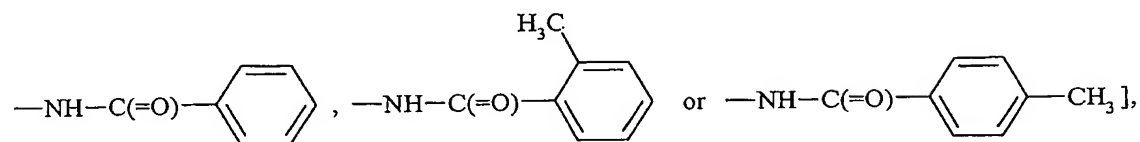


(v) -N(R<sup>6</sup>)C(=O)R<sup>4</sup>, particularly -NHC(=O)R<sup>4</sup>, in which (a) R<sup>4</sup> is alkyl optionally substituted by aryl, cycloalkyl, heteroaryl, heterocycloalkyl, NY<sup>1</sup>Y<sup>2</sup> or -OR<sup>5</sup> [e.g. -NH-C(=O)-CH<sub>3</sub>,

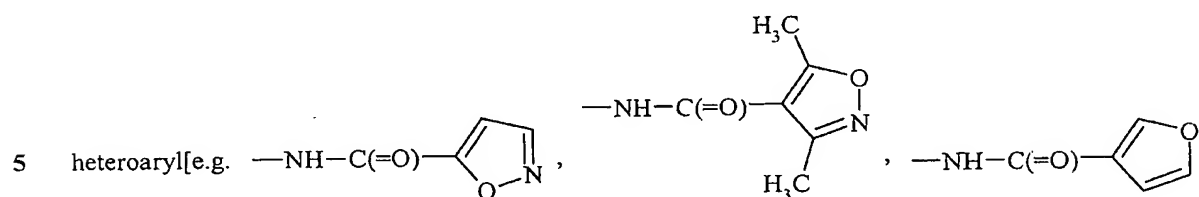




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 $-\text{NH}-\text{C}(=\text{O})-\text{CH}_2\text{OCH}_3$  ], (b)  $\text{R}^4$  is aryl [e.g.


(c)  $\text{R}^4$  is cycloalkyl [e.g.  $-\text{NH}-\text{C}(=\text{O})-\text{C}_3\text{H}_5$  or  $-\text{NH}-\text{C}(=\text{O})-\text{C}_5\text{H}_9$  ], (d)  $\text{R}^4$  is



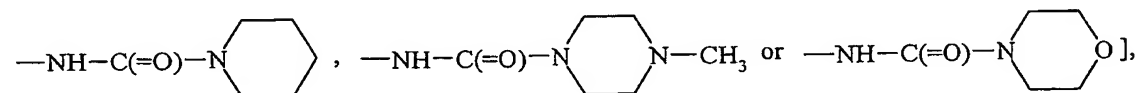
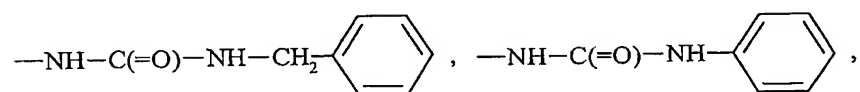
or  $-\text{NH}-\text{C}(=\text{O})-\text{C}_6\text{H}_4\text{N}$  ] or (e) heterocycloalkyl [e.g.  $-\text{NH}-\text{C}(=\text{O})-\text{C}_6\text{H}_8\text{O}$  ];

(vi)  $-\text{N}(\text{R}^6)\text{C}(=\text{O})\text{NY}^1\text{Y}^2$ , particularly  $-\text{NHC}(=\text{O})\text{NY}^1\text{Y}^2$  [e.g.  $-\text{NH}-\text{C}(=\text{O})-\text{NHCH}_3$ ,

 $-\text{NH}-\text{C}(=\text{O})-\text{NHCH}_2\text{CH}_3$ ,  $-\text{NH}-\text{C}(=\text{O})-\text{NHCH}(\text{CH}_3)_2$ ,

 $-\text{NH}-\text{C}(=\text{O})-\text{NHCH}_2\text{CH}(\text{CH}_3)_2$ ,  $-\text{NH}-\text{C}(=\text{O})-\text{NHC}(\text{CH}_3)_3$ ,  $-\text{NH}-\text{C}(=\text{O})-\text{N}(\text{CH}_3)_2$ ,

10  $-\text{NH}-\text{C}(=\text{O})-\text{N}(\text{CH}_2\text{CH}_3)_2$ ,  $-\text{NH}-\text{C}(=\text{O})-\text{NH}-\text{C}_3\text{H}_5$ ,  $-\text{NH}-\text{C}(=\text{O})-\text{NH}-\text{CH}_2-\text{C}_3\text{H}_5$ ,



(vii)  $-\text{NY}^1\text{Y}^2$  [e.g.  $-\text{NH}_2$ ] or (viii) alkyl substituted by  $-\text{N}(\text{R}^6)\text{C}(=\text{O})\text{NY}^1\text{Y}^2$  [e.g.  $-\text{CH}_2-\text{NH}-\text{C}(=\text{O})-$


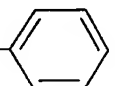
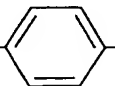
 $\text{CH}(\text{CH}_3)_2$  or  $-\text{CH}_2-\text{NH}-\text{C}(=\text{O})-\text{N} \begin{array}{c} \diagup \quad \diagdown \\ \text{---} \quad \text{---} \end{array} \text{O} ]$ ; and their corresponding N-oxides, and their

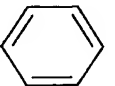


15 prodrugs, and their acid bioisosteres; and pharmaceutically acceptable salts and solvates (e.g. hydrates) of compounds of formula (Ixa) and their N-oxides and their prodrugs, and their acid bioisosteres.

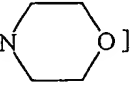
A further preferred group of compounds of the invention are compounds of formula (Ixa) in which: -W represents CH; X represents CR<sup>2</sup> and Y represents CR<sup>3</sup> where R<sup>2</sup> and R<sup>3</sup> form the group

-CH<sub>2</sub>-O-CH<sub>2</sub>-; Z represents CH; R<sup>7</sup> represents hydrogen; R<sup>8</sup> represents (i) hydrogen, (ii) C<sub>1-4</sub>alkyl

5 [e.g. CH<sub>3</sub>, CH<sub>2</sub>CH<sub>3</sub>, CH(CH<sub>3</sub>)<sub>2</sub> or CH(CH<sub>3</sub>)CH<sub>2</sub>CH<sub>3</sub>], (iii) -SR<sup>4</sup> [e.g. -S-CH<sub>3</sub>, -S-CH<sub>2</sub>CH<sub>3</sub>

or -S-CH<sub>2</sub>-, -S-CH<sub>2</sub>-, -S-CH<sub>2</sub>--OCH<sub>3</sub>,

-S-CH<sub>2</sub>-CH<sub>2</sub>-, -S-CH<sub>2</sub>- or -S-CH<sub>2</sub>- ], (iv) -NY<sup>1</sup>Y<sup>2</sup> [e.g.



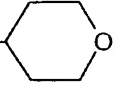
-NO ] or (v) -OR<sup>5</sup> [e.g. -OCH<sub>2</sub>CH<sub>3</sub>]; R<sup>9</sup> represents (i) hydrogen; (ii) C<sub>1-7</sub>alkyl [e.g. -CH<sub>3</sub>,

-CH<sub>2</sub>CH<sub>2</sub>CH<sub>3</sub>, -CH(CH<sub>3</sub>)<sub>2</sub> or -CH<sub>2</sub>-CH<sub>2</sub>-CH(CH<sub>3</sub>)<sub>2</sub>]; (iii) aryl [e.g. phenyl]; (iv) -C(=O)NY<sup>1</sup>Y<sup>2</sup> [e.g.

10 -C(=O)-NH-CH<sub>2</sub>CH<sub>3</sub>, -C(=O)-NH-CH<sub>2</sub>CH<sub>2</sub>CH<sub>3</sub>, -C(=O)-NH-CH<sub>2</sub>CH(CH<sub>3</sub>)<sub>2</sub>,

-C(=O)-NH-CH(CH<sub>3</sub>)<sub>2</sub>, -C(=O)-NH-C(CH<sub>3</sub>)<sub>3</sub>, -C(=O)-NH-C(CH<sub>3</sub>)<sub>2</sub>CH<sub>2</sub>OH,

-C(=O)-NH-CH<sub>2</sub>CH<sub>2</sub>OCH<sub>3</sub>, -C(=O)-N(CH<sub>3</sub>)<sub>2</sub>, -C(=O)-N(CH<sub>2</sub>CH<sub>3</sub>)<sub>2</sub>,

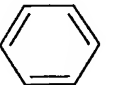

-C(=O)-NH-, -C(=O)-NH-CH<sub>2</sub>- or -C(=O)-NH-O ];

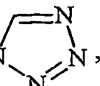
(v) -N(R<sup>6</sup>)C(=O)R<sup>4</sup>, particularly -NHC(=O)R<sup>4</sup>, in which (a) R<sup>4</sup> is alkyl optionally substituted by aryl,



15 cycloalkyl, heteroaryl, heterocycloalkyl, NY<sup>1</sup>Y<sup>2</sup> or -OR<sup>5</sup> [e.g. -NH-C(=O)-CH<sub>3</sub>,

-NH-C(=O)-(CH<sub>2</sub>)<sub>2</sub>CH<sub>3</sub>, -NH-C(=O)-CH(CH<sub>3</sub>)<sub>2</sub>, -NH-C(=O)-C(CH<sub>3</sub>)<sub>3</sub>,

-NH-C(=O)-CH<sub>2</sub>CH(CH<sub>3</sub>)<sub>2</sub>, -NH-C(=O)-CH(CH<sub>3</sub>)CH<sub>2</sub>CH<sub>3</sub>,

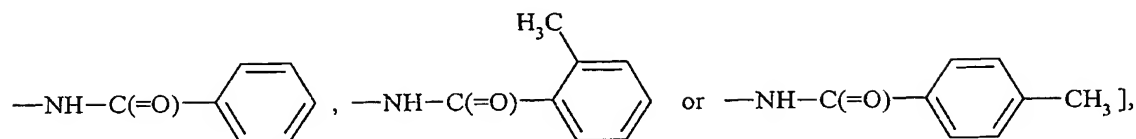
-NH-C(=O)-CH<sub>2</sub>C(CH<sub>3</sub>)<sub>3</sub>, -NH-C(=O)-CH<sub>2</sub>-, -NH-C(=O)-CH<sub>2</sub>-,



-NH-C(=O)-CH<sub>2</sub>-N, -NH-C(=O)-CH<sub>2</sub>-N(CH<sub>3</sub>)<sub>2</sub>,

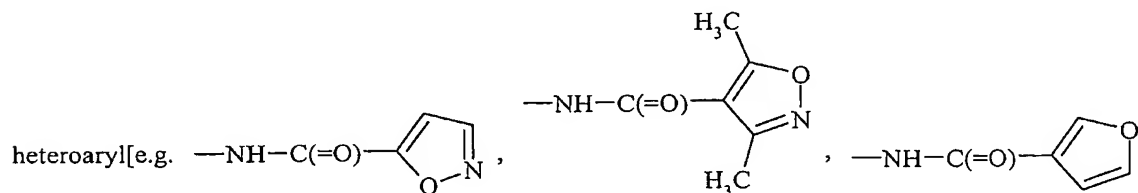
20 -NH-C(=O)-CH<sub>2</sub>-N, -NH-C(=O)-CH<sub>2</sub>-NO or

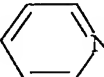
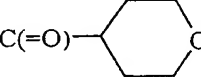
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—NH—C(=O)—CH<sub>2</sub>OCH<sub>3</sub> ], (b) R<sup>4</sup> is aryl [e.g.

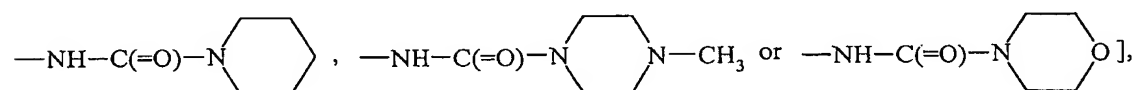
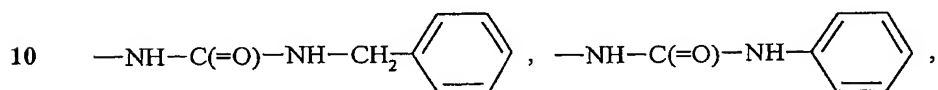
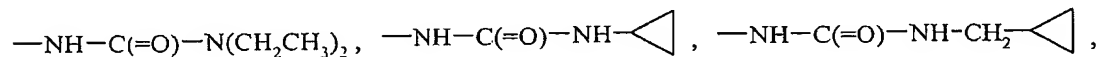
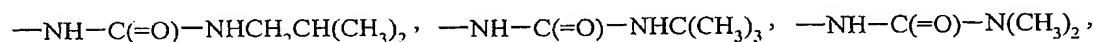
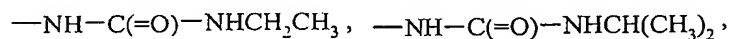


(c) R<sup>4</sup> is cycloalkyl [e.g. —NH—C(=O)— or —NH—C(=O)— ], (d) R<sup>4</sup> is

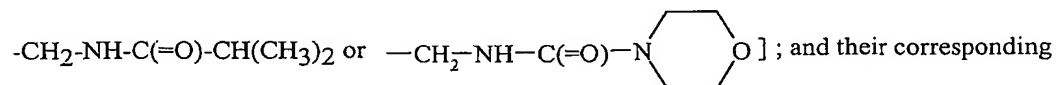


5 or —NH—C(=O)— ] or (e) heterocycloalkyl [e.g. —NH—C(=O)— ];

(vi) —N(R<sup>6</sup>)C(=O)NY<sup>1</sup>Y<sup>2</sup>, particularly —NHC(=O)NY<sup>1</sup>Y<sup>2</sup> [e.g. —NH—C(=O)—NHCH<sub>3</sub>,



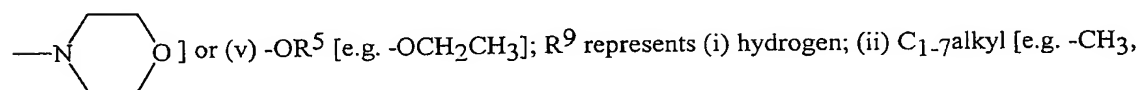
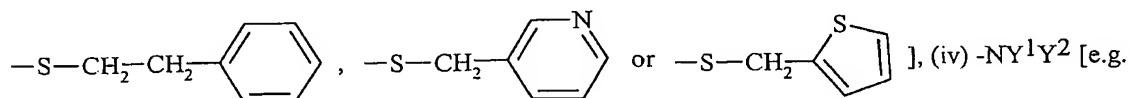
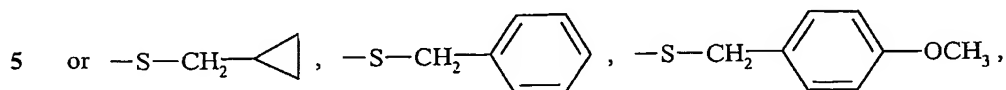
(vii) —NY<sup>1</sup>Y<sup>2</sup> [e.g. —NH<sub>2</sub>] or (viii) alkyl substituted by —N(R<sup>6</sup>)C(=O)NY<sup>1</sup>Y<sup>2</sup> [e.g.



N-oxides, and their prodrugs, and their acid bioisosteres; and pharmaceutically acceptable salts and  
 15 solvates (e.g. hydrates) of compounds of formula (Ixa) and their N-oxides and their prodrugs, and their acid bioisosteres.

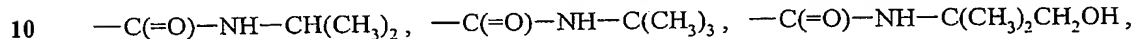
A further preferred group of compounds of the invention are compounds of formula (Ixa) in which: -W represents CH; X represents  $CR^2$  and Y represents  $CR^3$  where  $R^2$  and  $R^3$  form the group

-CH<sub>2</sub>-CH<sub>2</sub>-CH<sub>2</sub>-; Z represents CH;  $R^7$  represents hydrogen;  $R^8$  represents (i) hydrogen, (ii) C<sub>1-4</sub>alkyl [e.g. CH<sub>3</sub>, CH<sub>2</sub>CH<sub>3</sub>, CH(CH<sub>3</sub>)<sub>2</sub> or CH(CH<sub>3</sub>)CH<sub>2</sub>CH<sub>3</sub>], (iii) -SR<sup>4</sup> [e.g. -S-CH<sub>3</sub>, -S-CH<sub>2</sub>CH<sub>3</sub>

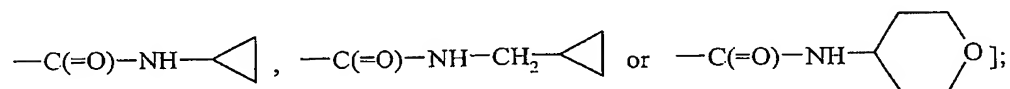


-CH<sub>2</sub>CH<sub>2</sub>CH<sub>3</sub>, -CH(CH<sub>3</sub>)<sub>2</sub> or -CH<sub>2</sub>-CH<sub>2</sub>-CH(CH<sub>3</sub>)<sub>2</sub>]; (iii) aryl [e.g. phenyl]; (iv) -C(=O)NY<sup>1</sup>Y<sup>2</sup> [e.g.

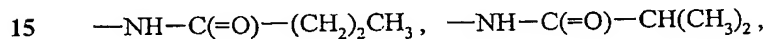
-C(=O)-NH-CH<sub>2</sub>CH<sub>3</sub>, -C(=O)-NH-CH<sub>2</sub>CH<sub>2</sub>CH<sub>3</sub>, -C(=O)-NH-CH<sub>2</sub>CH(CH<sub>3</sub>)<sub>2</sub>,



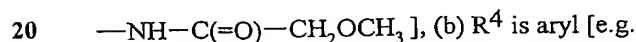
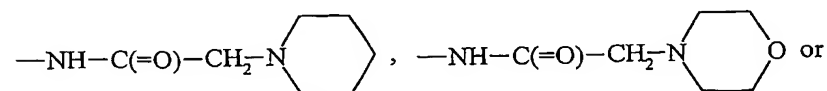
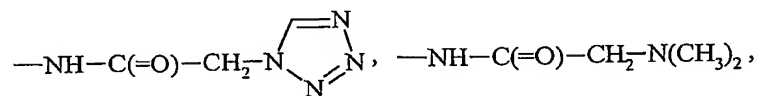
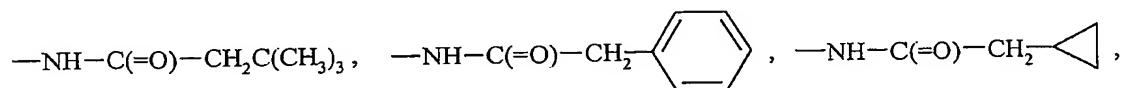
-C(=O)-NH-CH<sub>2</sub>CH<sub>2</sub>OCH<sub>3</sub>, -C(=O)-N(CH<sub>3</sub>)<sub>2</sub>, -C(=O)-N(CH<sub>2</sub>CH<sub>3</sub>)<sub>2</sub>,



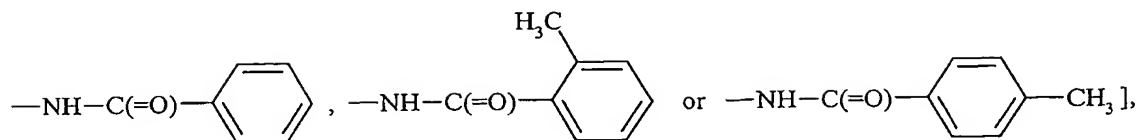
(v) -N(R<sup>6</sup>)C(=O)R<sup>4</sup>, particularly -NHC(=O)R<sup>4</sup>, in which (a) R<sup>4</sup> is alkyl optionally substituted by aryl, cycloalkyl, heteroaryl, heterocycloalkyl, NY<sup>1</sup>Y<sup>2</sup> or -OR<sup>5</sup> [e.g. -NH-C(=O)-CH<sub>3</sub>,



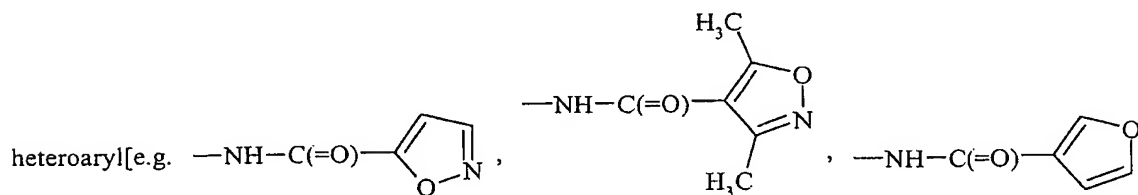
-NH-C(=O)-C(CH<sub>3</sub>)<sub>3</sub>, -NH-C(=O)-CH<sub>2</sub>CH(CH<sub>3</sub>)<sub>2</sub>, -NH-C(=O)-CH(CH<sub>3</sub>)CH<sub>2</sub>CH<sub>3</sub>,

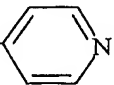
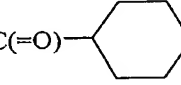




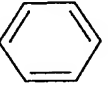
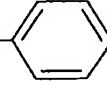
-61-

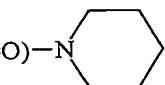
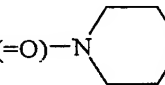
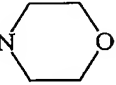


(c)  $R^4$  is cycloalkyl [e.g.  $\text{—NH—C(=O)—}$   or  $\text{—NH—C(=O)—}$   ], (d)  $R^4$  is

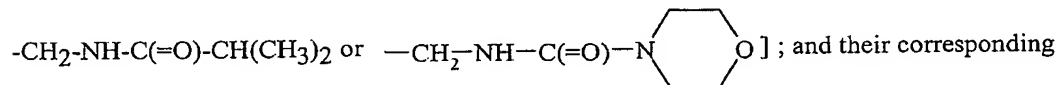


or  $\text{—NH—C(=O)—}$   ] or (e) heterocycloalkyl [e.g.  $\text{—NH—C(=O)—}$   ];

5 (vi)  $\text{—N(R}^6\text{)C(=O)NY}^1\text{Y}^2$ , particularly  $\text{—NHC(=O)NY}^1\text{Y}^2$  [e.g.  $\text{—NH—C(=O)—NHCH}_3$  ,  
 $\text{—NH—C(=O)—NHCH}_2\text{CH}_3$  ,  $\text{—NH—C(=O)—NHCH(CH}_3\text{)}_2$  ,  
 $\text{—NH—C(=O)—NHCH}_2\text{CH(CH}_3\text{)}_2$  ,  $\text{—NH—C(=O)—NHC(CH}_3\text{)}_3$  ,  $\text{—NH—C(=O)—N(CH}_3\text{)}_2$  ,  
 $\text{—NH—C(=O)—N(CH}_2\text{CH}_3\text{)}_2$  ,  $\text{—NH—C(=O)—NH—}$   ,  $\text{—NH—C(=O)—NH—CH}_2$   ,  
 $\text{—NH—C(=O)—NH—CH}_2$   ,  $\text{—NH—C(=O)—NH—}$   ,

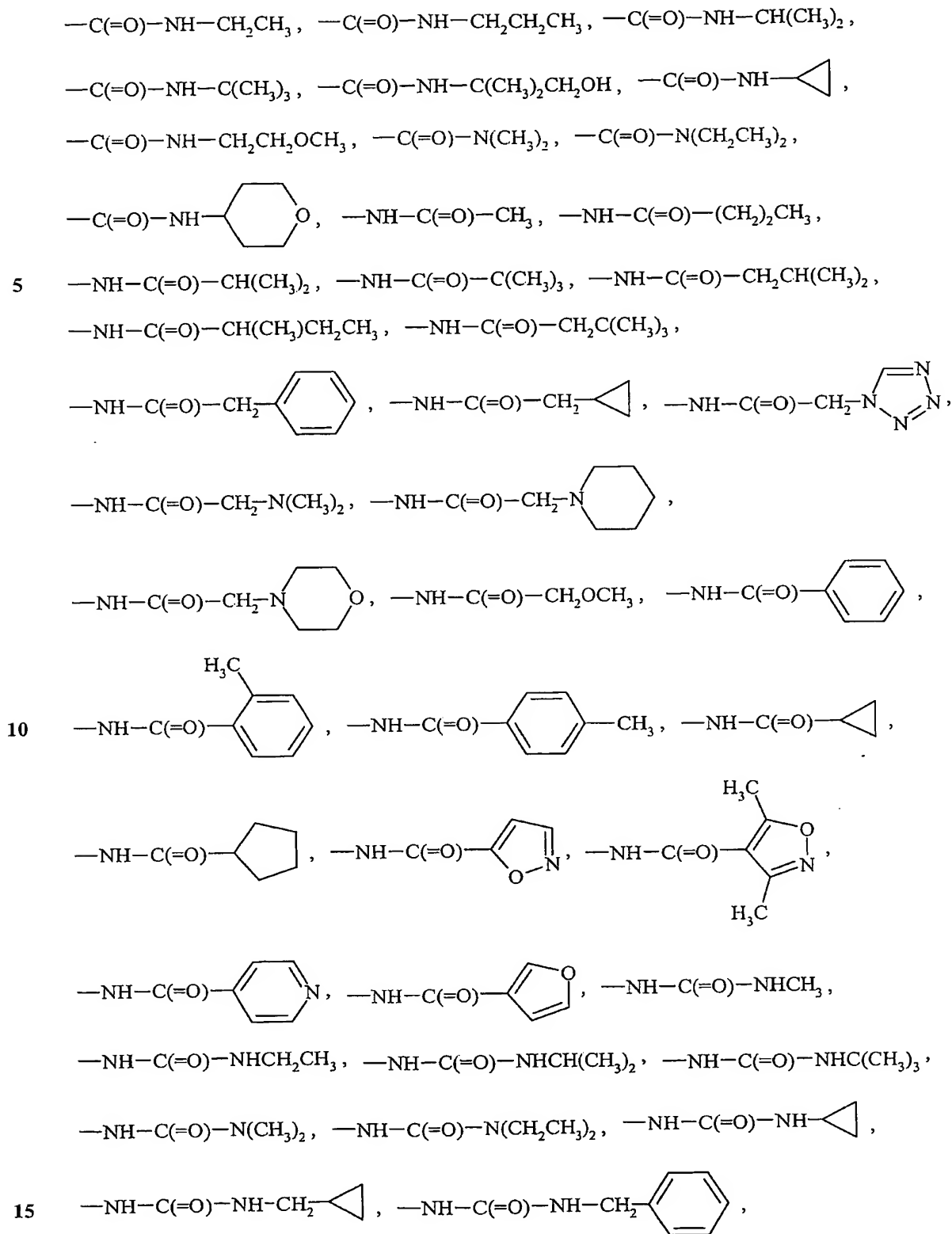
10  $\text{—NH—C(=O)—N}$   ,  $\text{—NH—C(=O)—N}$   or  $\text{—NH—C(=O)—N}$   ],

(vii)  $\text{—NY}^1\text{Y}^2$  [e.g.  $\text{—NH}_2$ ] or (viii) alkyl substituted by  $\text{—N(R}^6\text{)C(=O)NY}^1\text{Y}^2$  [e.g.

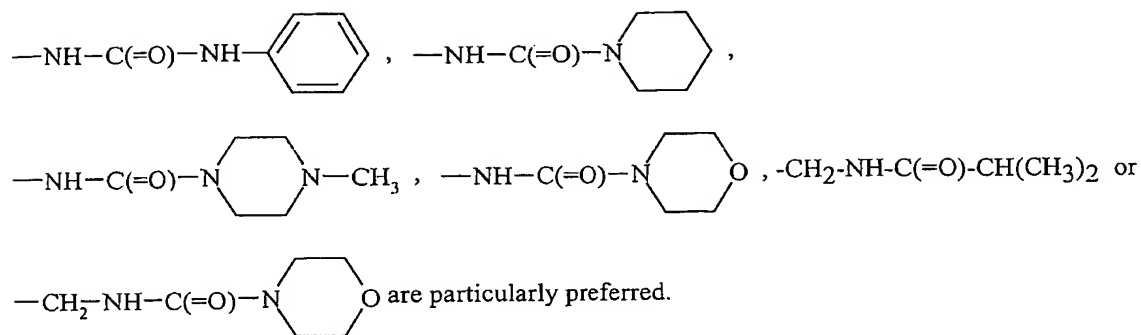


N-oxides, and their prodrugs, and their acid bioisosteres; and pharmaceutically acceptable salts and  
 solvates (e.g. hydrates) of compounds of formula (Ixa) and their N-oxides and their prodrugs, and their  
 15 acid bioisosteres.

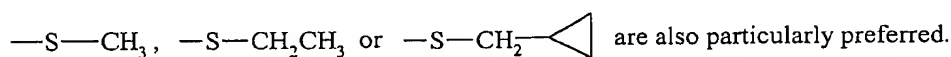
Compounds of formula (Ixa) in which  $R^8$  is hydrogen or  $\text{—CH}_3$  and  $R^9$  is  $\text{—CH}_2\text{—CH}_2\text{—CH(CH}_3\text{)}_2$ ,



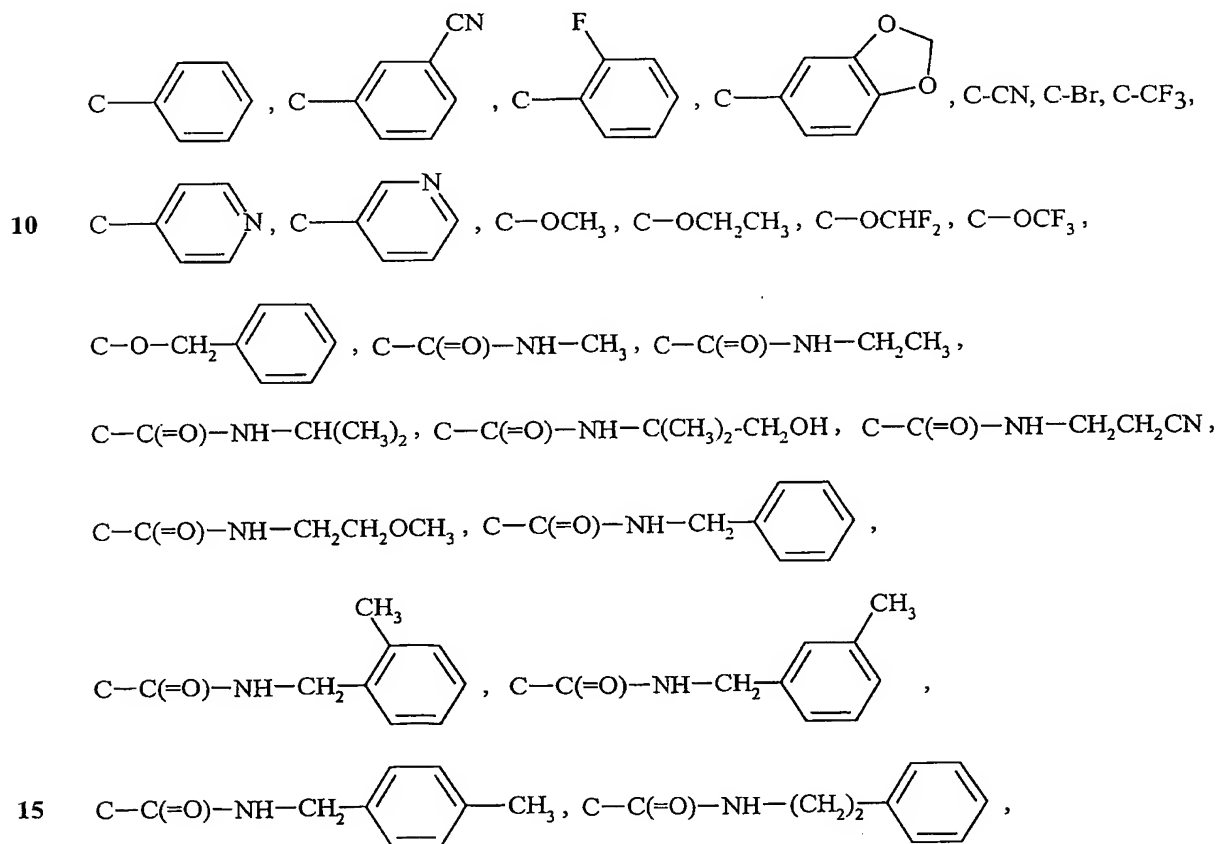
-63-

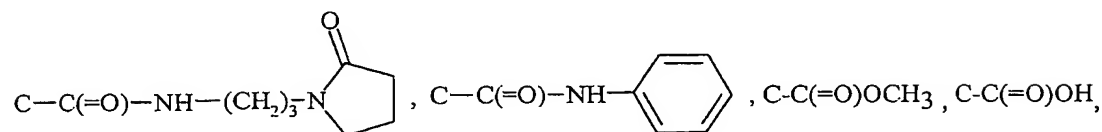
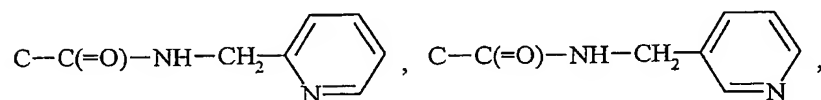
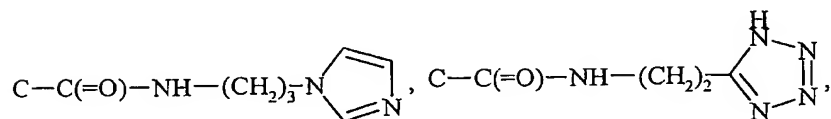
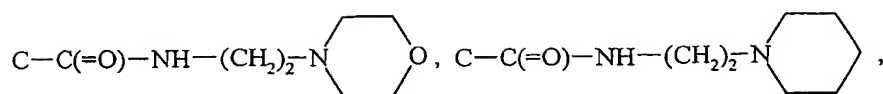


- 5 Compounds of formula (Ixa) in which  $\text{R}^9$  represents hydrogen and  $\text{R}^8$  represents  $-\text{CH}(\text{CH}_3)_2$ ,



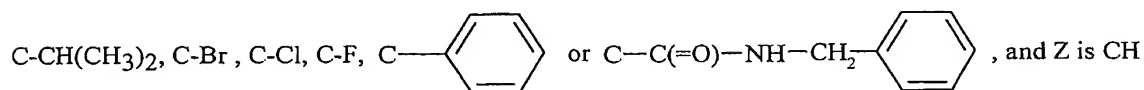
Compounds of formula (Ixa) in which W is CH, X is CH, Y is CH,  $\text{C}-\text{CH}_2\text{CH}_3$ ,  $\text{C}-\text{CH}_2\text{CH}_2\text{CH}_3$ ,





- 5  $\text{C}-\text{CH}(\text{OH})-\text{N} \begin{array}{c} \diagup \diagdown \\ \diagdown \diagup \end{array} , \text{C}-\text{SO}_2\text{CH}_3$  or  $\text{C}-\text{SO}_2-\text{NH}-\text{CH}_2-\text{N} \begin{array}{c} \diagup \diagdown \\ \diagdown \diagup \end{array}$  and Z is CH are particularly preferred.

Compounds of formula (Ixa) in which W is CH, X is C-CH<sub>3</sub> or C-CH<sub>2</sub>CH<sub>3</sub>, Y is C-CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>3</sub>,



- 10 are also particularly preferred.

Compounds of formula (Ixa) in which W is CH, X is C-OCH<sub>3</sub>, Y is CH, C-CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>3</sub>, C-Cl or C-OCH<sub>3</sub> and Z is CH are also particularly preferred.

- 15 Compounds of formula (Ixa) in which W is CH, X is C-OCH<sub>2</sub>CH<sub>3</sub>, Y is C-F and Z is CH are also particularly preferred.

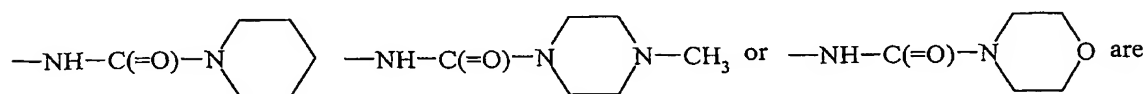
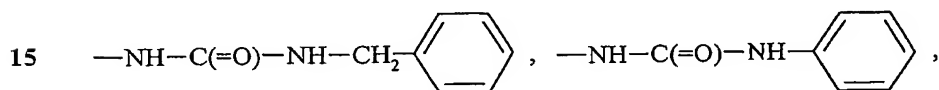
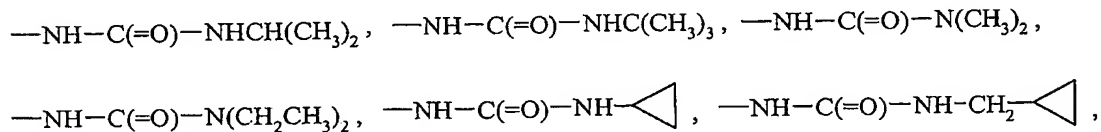
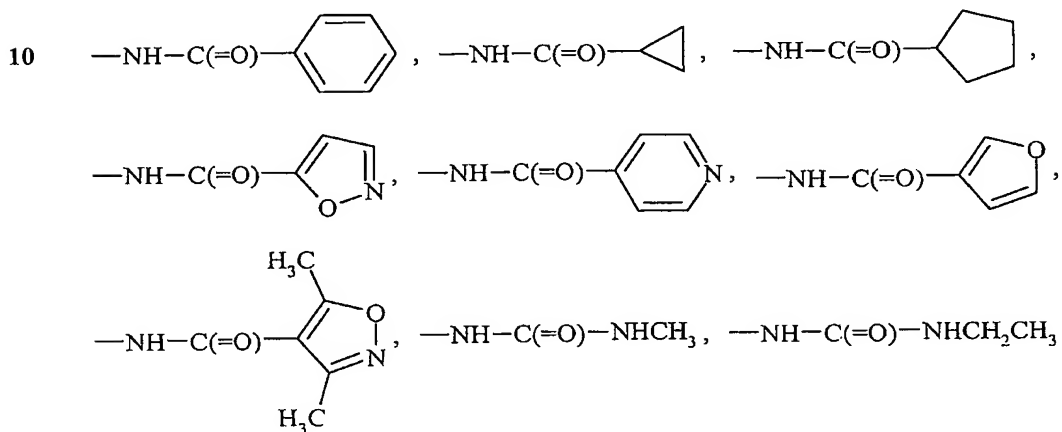
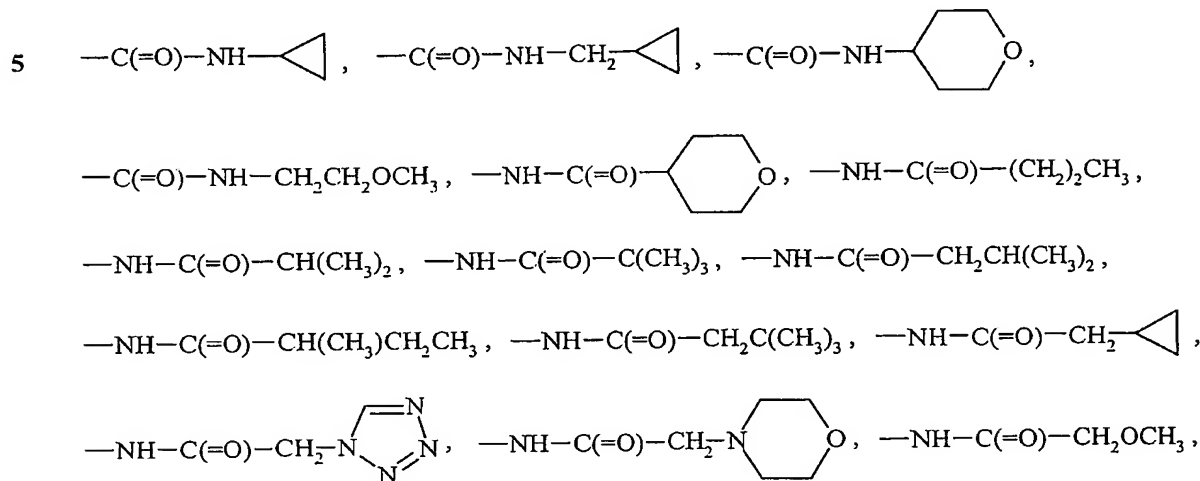
Compounds of formula (Ixa) in which W represents CH, X represents CR<sup>2</sup> and Y represents CR<sup>3</sup> where R<sup>2</sup> and R<sup>3</sup> atoms form the group -CH<sub>2</sub>-CH<sub>2</sub>-CH<sub>2</sub>-, and Z represents CH are also particularly preferred.

- 20

Compounds of formula (Ixa) in which W represents CH, X represents CR<sup>2</sup> and Y represents CR<sup>3</sup> where R<sup>2</sup> and R<sup>3</sup> form the group -CH<sub>2</sub>-O-CH<sub>2</sub>-, and Z represents CH are also particularly preferred.





Compounds of formula (Ixa) in which  $R^8$  is hydrogen or  $-CH_3$  and  $R^9$  is  $-C(=O)-NH-CH_2CH_3$ ,  
 $-C(=O)-NH-CH_2CH_2CH_3$ ,  $-C(=O)-NH-CH(CH_3)_2$ ,  $-C(=O)-NH-CH_2CH(CH_3)_2$ ,  
 $-C(=O)-NH-C(CH_3)_3$ ,  $-C(=O)-NH-C(CH_3)_2CH_2OH$ ,  $-C(=O)-N(CH_2CH_3)_2$ ,



especially preferred.

Compounds of formula (Ixa) in which W is CH, X is CH, Y is C-OCH<sub>3</sub>, C-OCH<sub>2</sub>CH<sub>3</sub>, C-OCHF<sub>2</sub>,

C-CF<sub>3</sub>, C-C(=O)-NH-CH<sub>2</sub>- or C-C(=O)-NH-CH<sub>2</sub>- and Z is CH are

especially preferred.

5

Compounds of formula (Ixa) in which W is CH, X is C-CH<sub>3</sub> or C-CH<sub>2</sub>CH<sub>3</sub>, Y is C-CH<sub>3</sub> or C-CH<sub>2</sub>CH<sub>3</sub>, C-Cl or C-F and Z is CH are also especially preferred.

Compounds of formula (Ixa) in which W is CH, X is C-OCH<sub>3</sub>, Y is C-CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>3</sub>, C-Cl, C-F or

10 C-OCH<sub>3</sub> and Z is CH are also especially preferred.

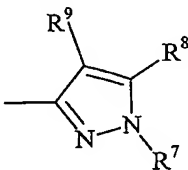
Compounds of formula (Ixa) in which W is CH, X is C-OCH<sub>2</sub>CH<sub>3</sub>, Y is C-Cl or C-F and Z is CH are also especially preferred.

15 Compounds of formula (Ixa) in which W represents CH, X represents CR<sup>2</sup> and Y represents CR<sup>3</sup> where R<sup>2</sup> and R<sup>3</sup> form the group -CH<sub>2</sub>-CH<sub>2</sub>-CH<sub>2</sub>-, and Z represents CH are also especially preferred.

Compounds of formula (Ixa) in which W represents CH, X represents CR<sup>2</sup> and Y represents CR<sup>3</sup> where R<sup>2</sup> and R<sup>3</sup> form the group -CH<sub>2</sub>-O-CH<sub>2</sub>-, and Z represents CH are also especially preferred.

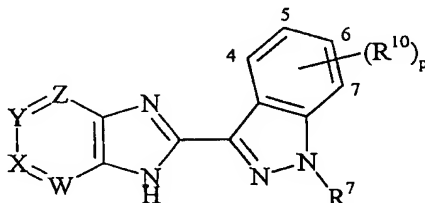
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Another particular group of compounds of the invention are compounds of formula (Ix) wherein R<sup>1</sup> is a

heteroaryl moiety  in which R<sup>8</sup> and R<sup>9</sup> together with the carbon atoms to which they

are attached form an optionally substituted phenyl ring, i.e. compounds of formula (Ixb):-

25



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(Ixb)

in which W, X, Y, Z and R<sup>7</sup> are as hereinbefore defined for compounds of formula (Ix); R<sup>10</sup> is carboxy, cyano, halo, haloalkyl, hydroxy, nitro, R<sup>4</sup>, -C(=O)R<sup>4</sup>, -C(=O)NY<sup>1</sup>Y<sup>2</sup>, -C(=O)OR<sup>4</sup>,  
 5 -N(R<sup>6</sup>)C(=O)R<sup>4</sup>, -N(R<sup>6</sup>)C(=O)NY<sup>1</sup>Y<sup>2</sup>, -N(R<sup>6</sup>)C(=O)OR<sup>4</sup>, -N(R<sup>6</sup>)SO<sub>2</sub>R<sup>4</sup>, -N(R<sup>6</sup>)SO<sub>2</sub>NY<sup>1</sup>Y<sup>2</sup>,  
 -NY<sup>1</sup>Y<sup>2</sup>, -OR<sup>4</sup>, -OCF<sub>2</sub>H, -OCF<sub>3</sub>, -OC(=O)R<sup>4</sup>, -OC(=O)NY<sup>1</sup>Y<sup>2</sup>, -S(O)<sub>n</sub>R<sup>4</sup> or -S(O)<sub>2</sub>NY<sup>1</sup>Y<sup>2</sup>; and p is zero, or an integer 1; and their corresponding N-oxides, and their prodrugs, and their acid bioisosteres; and pharmaceutically acceptable salts and solvates (e.g. hydrates) of compounds of formula (Ixb) and their N-oxides and their prodrugs, and their acid bioisosteres.


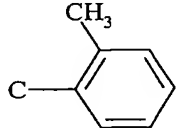
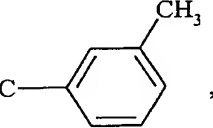
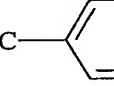
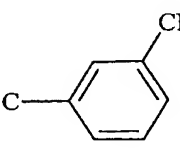
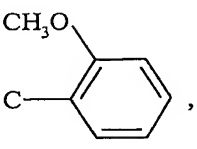
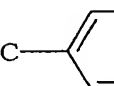
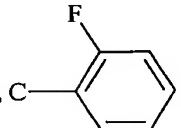
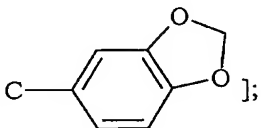
10

Compounds of formula (Ixb) in which W represents CH, X represents CH, Y represents CH and Z represents CH or C-CH<sub>3</sub> are preferred.

15

Compounds of formula (Ixb) in which W represents CH, X represents CH, Z represents CH and Y represents:

(i) C-C<sub>1-4</sub>alkyl [e.g. C-CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>2</sub>CH<sub>3</sub> or C-CH(CH<sub>3</sub>)<sub>2</sub>];

(ii) C-aryl [e.g. C-, C-, C-,  
, C-, C-,  
, C- or C-];

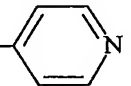
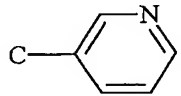
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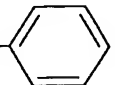
(iii) C-CN;

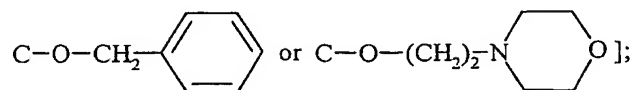
(iv) C-NO<sub>2</sub>;

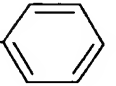
(v) C-halo [e.g. C-Br, C-Cl or C-F];

(vi) C-haloalkyl [e.g. C-CF<sub>3</sub>];

(vii) C-heteroaryl [e.g. C- or C-];

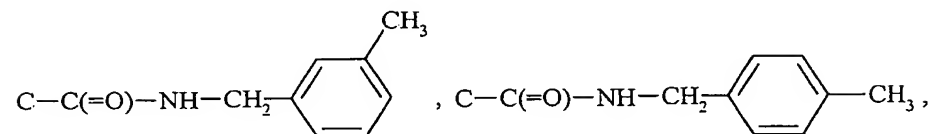
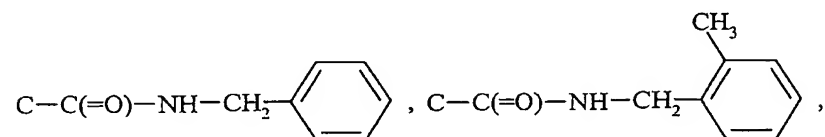
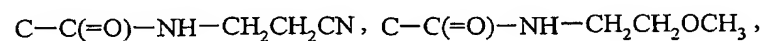
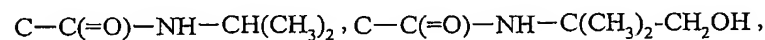
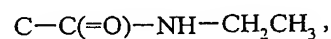
(viii)  $C-OR^4$  [e.g.  $C-OCH_3$ ,  $C-OCH_2CH_3$ ,  $C-OCHF_2$ ,  $C-OCF_3$ ,  $C-O$ -],



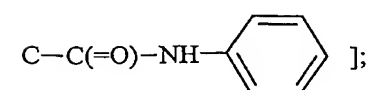
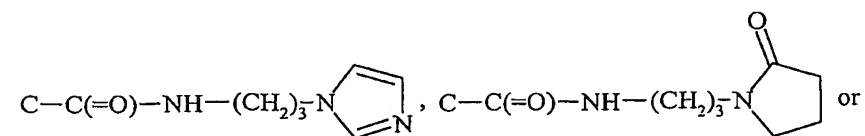
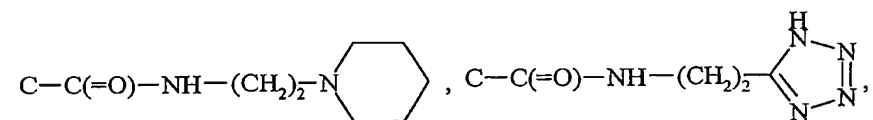
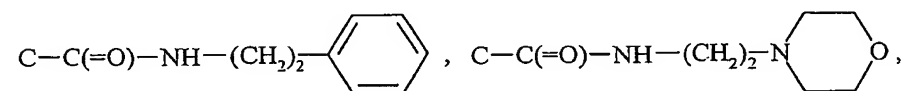
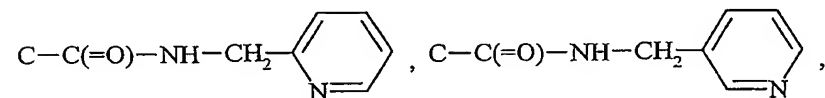
(ix)  $C-C(=O)R^4$  [e.g.  $C-C(=O)$ -];

(x)  $C-C(=O)NY^1Y^2$  [e.g.  $C-C(=O)-NH-CH_3$ ,  $C-C(=O)-N(CH_3)_2$ ,

5

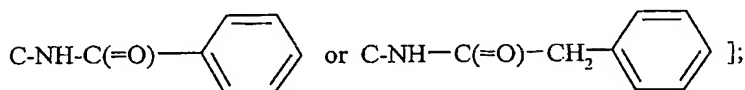


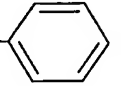
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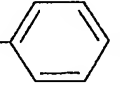


(xi)  $C-C(=O)OR^4$  [e.g.  $C-C(=O)OH$  or  $C-C(=O)OCH_3$ ];

(xii)  $C-NHC(=O)R^4$  [e.g.  $C-NHC(=O)CH_3$ ,  $C-NHC(=O)CH(CH_3)_2$ ,



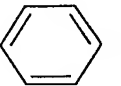
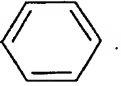
(xiii)  $C-CH(OH)aryl$  [e.g.  $C-CH(OH)-$  ];

5 (xiv)  $C-S(O)_2NY^1Y^2$  [e.g.  $C-SO_2-NH-CH_2-$  ]; or

(xv)  $C-S(O)_nR^4$  [e.g.  $C-SO_2CH_3$ ];

are also preferred.

Compounds of formula (Ixb) in which W represents CH, X represents  $C-CH_3$ ,  $C-CH_2CH_3$ ,  
10  $C-CH(CH_3)_2$ ,  $C-OCH_3$ ,  $C-OCH_2CH_3$ ,  $C-Br$  or  $C-Cl$ , Y represents  $C-CH_3$ ,  $C-CH_2CH_3$ ,  $C-OCH_3$ ,

$C-Br$ ,  $C-Cl$ ,  $C-F$ ,  $C-$  or  $C-C(=O)-NH-CH_2-$  . and Z represents CH are also  
preferred.

Compounds of formula (Ixb) in which W represents CH, X represents CH, Y represents  $C-CH_3$  and Z  
15 represents  $C-CH_3$  are also preferred.

Compounds of formula (Ixb) in which W represents CH, X represents  $CR^2$  and Y represents  $CR^3$   
where  $R^2$  and  $R^3$  form the group  $-CH_2-O-CH_2-$ , and Z represents CH are also preferred.

20 Compounds of formula (Ixb) in which W represents CH, X represents  $CR^2$  and Y represents  $CR^3$   
where  $R^2$  and  $R^3$  form the group  $-CH_2-CH_2-CH_2-$ , and Z represents CH are also preferred.

Compounds of formula (Ixb) in which  $R^7$  represents hydrogen are preferred.

25 Compounds of formula (Ixb) in which p is zero or one are preferred.

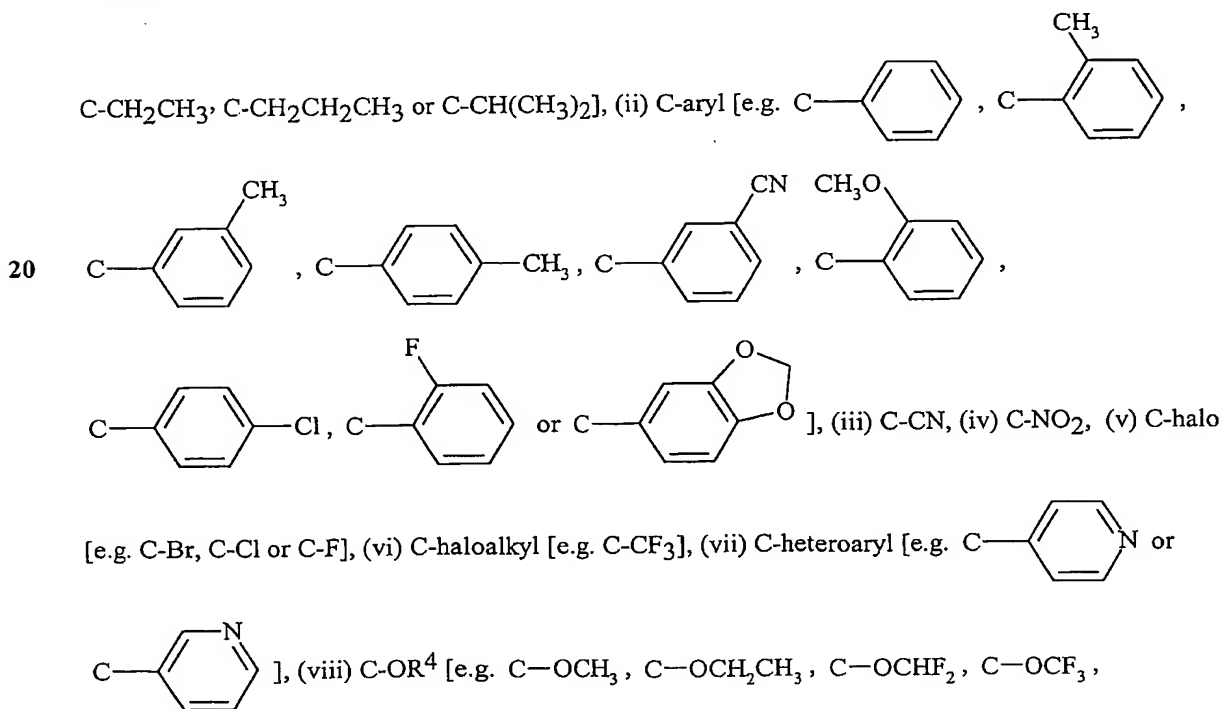
Compounds of formula (Ixb) in which R<sup>10</sup> represents:

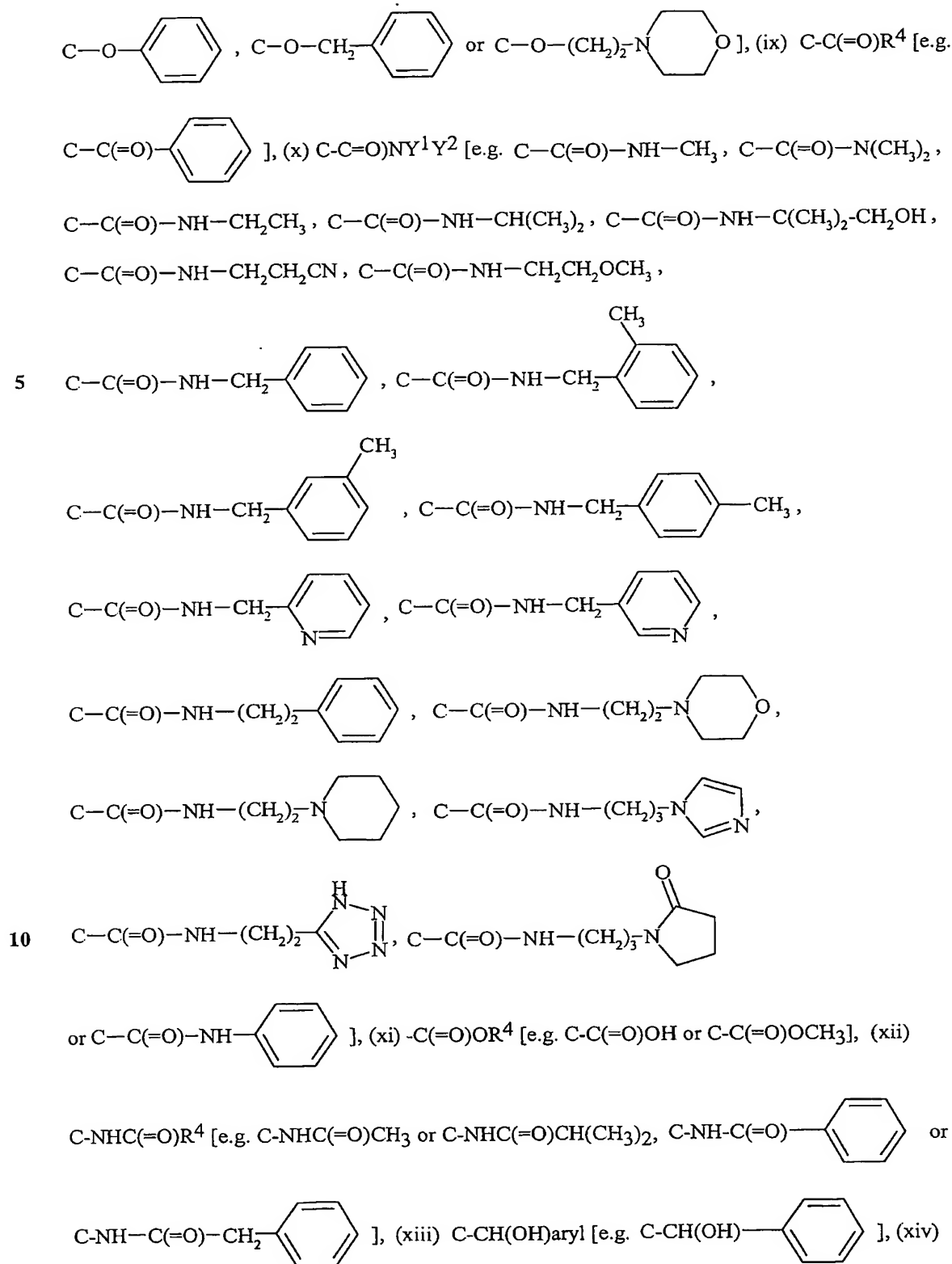
- (i) cyano
- (ii) halo [e.g. chloro, fluoro];
- (iii) C<sub>1-4</sub>alkyl [e.g. methyl,
- 5 (iv) -OR<sup>4</sup> [e.g. -OCH<sub>3</sub>, -OCH<sub>2</sub>CH<sub>3</sub>]; or
- (v) -C(=O)NY<sup>1</sup>Y<sup>2</sup> [e.g. -C(=O)-NH<sub>2</sub>, -C(=O)-NHCH(CH<sub>3</sub>)<sub>2</sub>, -C(=O)-N(CH<sub>3</sub>)<sub>2</sub>]

are preferred.

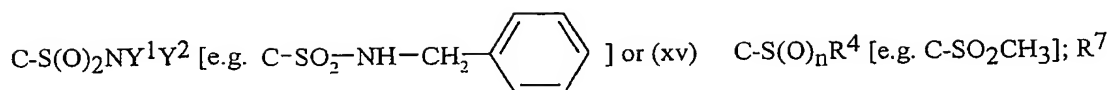
- A preferred group of compounds of the invention are compounds of formula (Ixb) in which:- W
- 10 represents CH; X represents CH; Y represents CH; Z represents CH or C-CH<sub>3</sub>; R<sup>7</sup> represents hydrogen; R<sup>10</sup> represents (i) cyano, (ii) halo [e.g. chloro, fluoro], (iii) C<sub>1-4</sub>alkyl [e.g. methyl], (iv) -OR<sup>4</sup> [e.g. -OCH<sub>3</sub> or -OCH<sub>2</sub>CH<sub>3</sub>] or (v) -C(=O)NY<sup>1</sup>Y<sup>2</sup> [e.g. -C(=O)-NH<sub>2</sub>, -C(=O)-NHCH(CH<sub>3</sub>)<sub>2</sub> or -C(=O)-N(CH<sub>3</sub>)<sub>2</sub>]; and their corresponding N-oxides, and their prodrugs, and their acid bioisosteres;
  - 15 and pharmaceutically acceptable salts and solvates (e.g. hydrates) of compounds of formula (Ixb) and their N-oxides and their prodrugs, and their acid bioisosteres.

A further preferred group of compounds of the invention are compounds of formula (Ixb) in which:- W represents CH; X represents CH; Z represents CH; Y represents (i) C-C<sub>1-4</sub>alkyl [e.g. C-CH<sub>3</sub>,



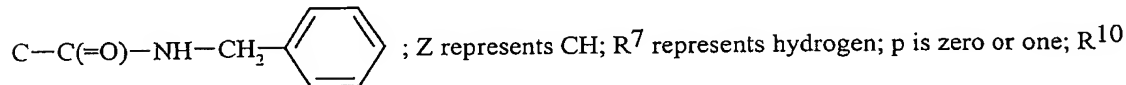
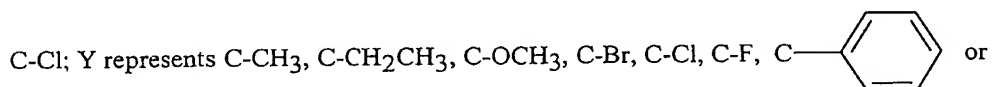


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represents hydrogen; p is zero or one;  $R^{10}$  represents (i) cyano, (ii) halo [e.g. chloro, fluoro], (iii)  $C_{1-4}$ alkyl [e.g. methyl], (iv)  $-OR^4$  [e.g.  $-OCH_3$  or  $-OCH_2CH_3$ ] or (v)  $-C(=O)NY^1Y^2$  [e.g.  $-C(=O)-NH_2$ ,  $-C(=O)-NHCH(CH_3)_2$  or  $-C(=O)-N(CH_3)_2$ ]; and their corresponding N-oxides, and  
 5 their prodrugs, and their acid bioisosteres; and pharmaceutically acceptable salts and solvates (e.g. hydrates) of compounds of formula (Ixb) and their N-oxides and their prodrugs, and their acid bioisosteres.

A further preferred group of compounds of the invention are compounds of formula (Ixb) in which:- W  
 10 represents CH; X represents  $C-CH_3$ ,  $C-CH_2CH_3$ ,  $C-CH(CH_3)_2$ ,  $C-OCH_3$ ,  $C-OCH_2CH_3$ ,  $C-Br$  or



represents (i) cyano, (ii) halo [e.g. chloro, fluoro], (iii)  $C_{1-4}$ alkyl [e.g. methyl], (iv)  $-OR^4$  [e.g.  $-OCH_3$  or  $-OCH_2CH_3$ ] or (v)  $-C(=O)NY^1Y^2$  [e.g.  $-C(=O)-NH_2$ ,  $-C(=O)-NHCH(CH_3)_2$  or  $-C(=O)-N(CH_3)_2$ ];  
 15 and their corresponding N-oxides, and their prodrugs, and their acid bioisosteres; and pharmaceutically acceptable salts and solvates (e.g. hydrates) of compounds of formula (Ixb) and their N-oxides and their prodrugs, and their acid bioisosteres.

A further preferred group of compounds of the invention are compounds of formula (Ixb) in which:-  
 20 represents CH; X represents CH; Y represents  $C-CH_3$ ; Z represents  $C-CH_3$ ;  $R^7$  represents hydrogen; p is zero or one;  $R^{10}$  represents (i) cyano, (ii) halo [e.g. chloro, fluoro], (iii)  $C_{1-4}$ alkyl [e.g. methyl], (iv)  $-OR^4$  [e.g.  $-OCH_3$  or  $-OCH_2CH_3$ ] or (v)  $-C(=O)NY^1Y^2$  [e.g.  $-C(=O)-NH_2$ ,  $-C(=O)-NHCH(CH_3)_2$  or  $-C(=O)-N(CH_3)_2$ ]; and their corresponding N-oxides, and their prodrugs, and their acid bioisosteres; and pharmaceutically acceptable salts and solvates (e.g. hydrates) of compounds of formula (Ixb) and  
 25 their N-oxides and their prodrugs, and their acid bioisosteres.

A further preferred group of compounds of the invention are compounds of formula (Ixb) in which:- W represents CH; X represents  $CR^2$  and Y represents  $CR^3$  where  $R^2$  and  $R^3$  form the group



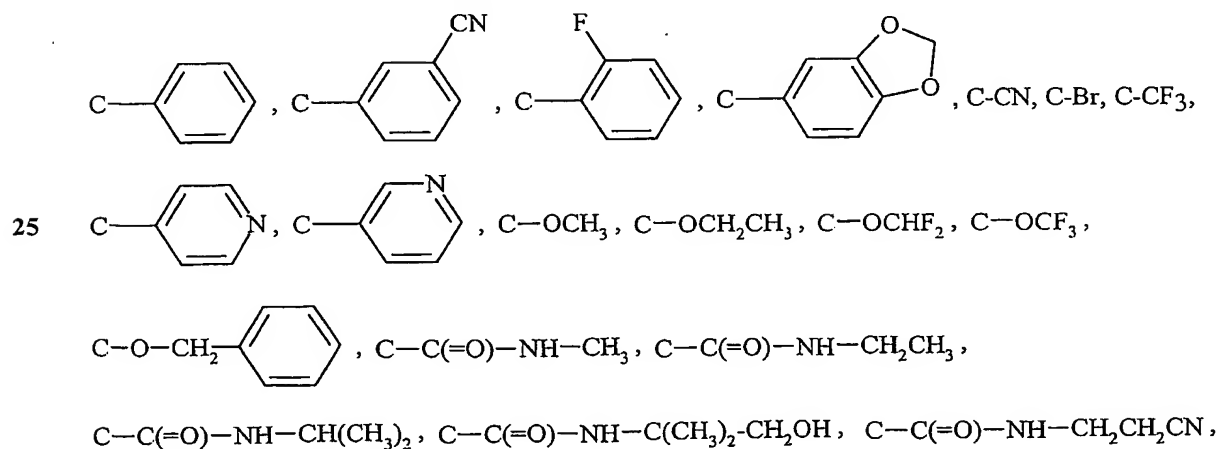
- CH<sub>2</sub>-O-CH<sub>2</sub>-; Z represents CH; R<sup>7</sup> represents hydrogen; p is zero or one; R<sup>10</sup> represents (i) cyano, (ii) halo [e.g. chloro, fluoro], (iii) C1-4alkyl [e.g. methyl], (iv) -OR<sup>4</sup> [e.g. -OCH<sub>3</sub> or -OCH<sub>2</sub>CH<sub>3</sub>] or (v) -C(=O)NY<sup>1</sup>Y<sup>2</sup> [e.g. -C(=O)-NH<sub>2</sub>, -C(=O)-NHCH(CH<sub>3</sub>)<sub>2</sub> or -C(=O)-N(CH<sub>3</sub>)<sub>2</sub>]; and their corresponding N-oxides, and their prodrugs, and their acid bioisosteres; and pharmaceutically acceptable salts and solvates (e.g. hydrates) of compounds of formula (Ixb) and their N-oxides and their prodrugs, and their acid bioisosteres.

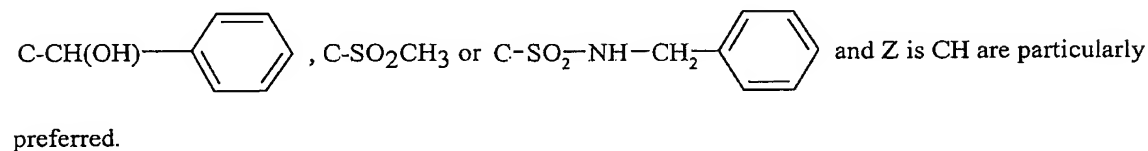
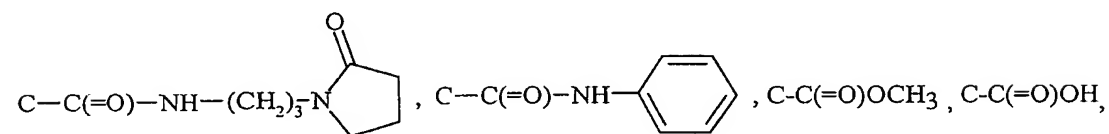
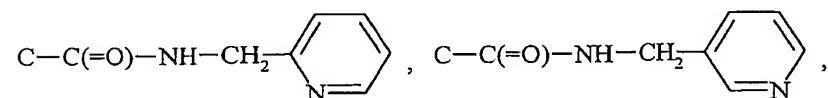
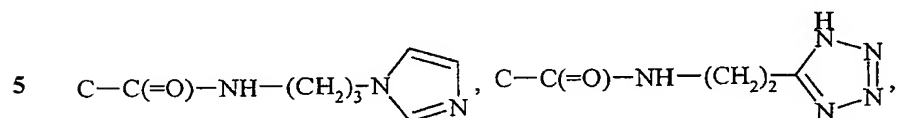
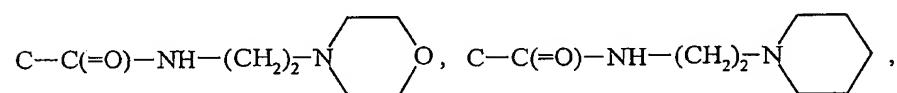
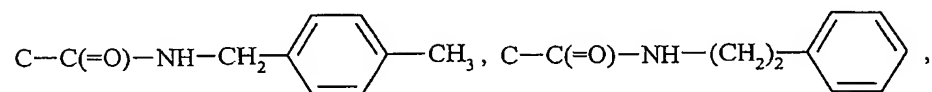
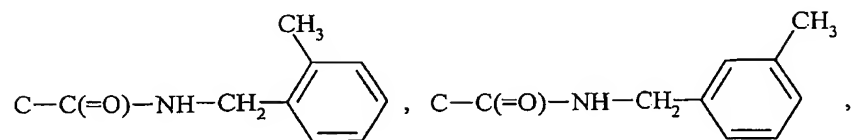
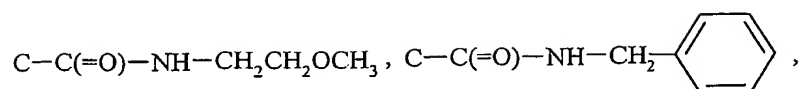
- A further preferred group of compounds of the invention are compounds of formula (Ixb) in which:- W represents CH; X represents CR<sup>2</sup> and Y represents CR<sup>3</sup> where R<sup>2</sup> and R<sup>3</sup> form the group
- 10 -CH<sub>2</sub>-CH<sub>2</sub>-CH<sub>2</sub>-; Z represents CH; R<sup>7</sup> represents hydrogen; p is zero or one; R<sup>10</sup> represents (i) cyano, (ii) halo [e.g. chloro, fluoro], (iii) C1-4alkyl [e.g. methyl], (iv) -OR<sup>4</sup> [e.g. -OCH<sub>3</sub> or -OCH<sub>2</sub>CH<sub>3</sub>] or (v) -C(=O)NY<sup>1</sup>Y<sup>2</sup> [e.g. -C(=O)-NH<sub>2</sub>, -C(=O)-NHCH(CH<sub>3</sub>)<sub>2</sub> or -C(=O)-N(CH<sub>3</sub>)<sub>2</sub>]; and their corresponding N-oxides, and their prodrugs, and their acid bioisosteres; and pharmaceutically acceptable salts and solvates (e.g. hydrates) of compounds of formula (Ixb) and their N-oxides and
- 15 their prodrugs, and their acid bioisosteres.

Compounds of formula (Ixb) in which R<sup>7</sup> represents hydrogen and p is zero are particularly preferred.

- Compounds of formula (Ixb) in which R<sup>7</sup> represents hydrogen; p is one and R<sup>10</sup> represents cyano, chloro, fluoro, methyl, -OCH<sub>3</sub>, -OCH<sub>2</sub>CH<sub>3</sub>, -C(=O)-NH<sub>2</sub>, -C(=O)-NHCH(CH<sub>3</sub>)<sub>2</sub> or
- 20 -C(=O)-N(CH<sub>3</sub>)<sub>2</sub> are also particularly preferred.

Compounds of formula (Ixb) in which W is CH, X is CH, Y is CH, C-CH<sub>2</sub>CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>2</sub>CH<sub>3</sub>,





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Compounds of formula (Ixb) in which W is CH, X is C-CH<sub>3</sub> or C-CH<sub>2</sub>CH<sub>3</sub>, Y is C-CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>3</sub>,

C-CH(CH<sub>3</sub>)<sub>2</sub>, C-Br, C-Cl, C-F, C-C<sub>6</sub>H<sub>5</sub>, C-C(=O)-NH-CH<sub>2</sub>-C<sub>6</sub>H<sub>5</sub>, and Z is CH are also particularly preferred.

15

Compounds of formula (Ixb) in which W is CH, X is C-OCH<sub>3</sub>, Y is CH, C-CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>3</sub>, C-Cl or C-OCH<sub>3</sub> and Z is CH are also particularly preferred.

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Compounds of formula (Ixb) in which W is CH, X is C-OCH<sub>2</sub>CH<sub>3</sub>, Y is C-F and Z is CH are also particularly preferred.

Compounds of formula (Ixb) in which W represents CH, X represents CR<sup>2</sup> and Y represents CR<sup>3</sup> where R<sup>2</sup> and R<sup>3</sup> form the group -CH<sub>2</sub>-CH<sub>2</sub>-CH<sub>2</sub>-, and Z represents CH are also particularly preferred.

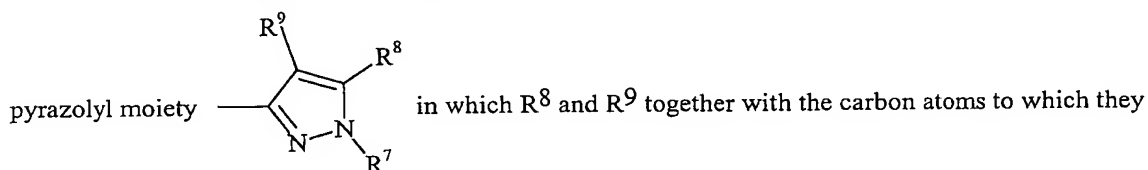
Compounds of formula (Ixb) in which W represents CH, X represents CR<sup>2</sup> and Y represents CR<sup>3</sup> where R<sup>2</sup> and R<sup>3</sup> form the group -CH<sub>2</sub>-O-CH<sub>2</sub>-, and Z represents CH are also particularly preferred.

Compounds of formula (Ixb) in which R<sup>7</sup> represents hydrogen and p is zero are especially preferred.

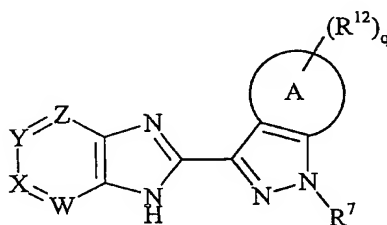
Compounds of formula (Ixb) in which R<sup>7</sup> represents hydrogen; p is one and R<sup>10</sup> represents -OCH<sub>3</sub>, -OCH<sub>2</sub>CH<sub>3</sub> or -C(=O)-NHCH(CH<sub>3</sub>)<sub>2</sub> attached to position 5 of the indazolyl ring are also especially preferred.

Compounds of formula (Ixb) in which W is CH, X is C-CH<sub>3</sub> or C-CH<sub>2</sub>CH<sub>3</sub>, Y is C-CH<sub>3</sub> or C-CH<sub>2</sub>CH<sub>3</sub> and Z is CH are also especially preferred.

Another particular group of compounds of the invention are compounds of formula (Ix) wherein R<sup>1</sup> is a




are attached form an optionally substituted C<sub>5</sub>-cycloalkyl ring, i.e. compounds of formula (Ixc):-



(Ixc)

25

in which W, X, Y, Z, X and p are as hereinbefore defined for compounds of formula (Ix),  is a

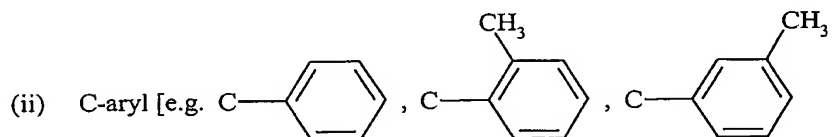
- 5 C<sub>5-8</sub>cycloalkyl ring and R<sup>12</sup> is acyl, acylamino, alkoxy, alkoxy carbonyl, alkylenedioxy, alkylsulfinyl, alkylsulfonyl, alkylthio, aroyl, aroylamino, aryl, arylalkyloxy, arylalkyloxycarbonyl, arylalkylthio, aryloxy, aryloxycarbonyl, arylsulfinyl, arylsulfonyl, arylthio, carboxy (or an acid bioisostere), cyano, cycloalkyl, halo, heteroaroyl, heteroaryl, heteroarylalkyloxy, heteroaroylamino, heteroaryloxy, heterocycloalkyl, hydroxy, nitro, trifluoromethyl, -C(=O)NY<sup>1</sup>Y<sup>2</sup>, -NY<sup>1</sup>-C(=O)alkyl, -NY<sup>1</sup>SO<sub>2</sub>alkyl, -NY<sup>1</sup>Y<sup>2</sup>, -SO<sub>2</sub>NY<sup>1</sup>Y<sup>2</sup> or alkyl, alkenyl or alkynyl each optionally substituted with aryl, cycloalkyl, heteroaryl, hydroxy, -C(=O)OR<sup>6</sup>, -C(=O)NY<sup>1</sup>Y<sup>2</sup>, -NY<sup>1</sup>Y<sup>2</sup> or -OR<sup>5</sup>; and their corresponding N-oxides, and their prodrugs, and their acid bioisosteres; and pharmaceutically acceptable salts and
- 10 solvates (e.g. hydrates) of compounds of formula (Ixc) and their N-oxides and their prodrugs, and their acid bioisosteres.

Compounds of formula (Ixc) in which W represents CH, X represents CH, Y represents CH and Z represents CH or C-CH<sub>3</sub> are preferred.

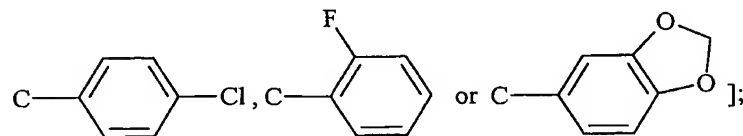
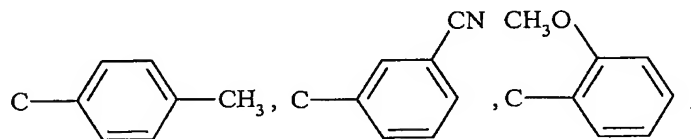
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Compounds of formula (Ixc) in which W represents CH, X represents CH, Z represents CH and Y represents:

- (i) C-C<sub>1-4</sub>alkyl [e.g. C-CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>2</sub>CH<sub>3</sub> or C-CH(CH<sub>3</sub>)<sub>2</sub>];



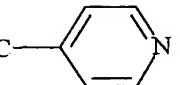
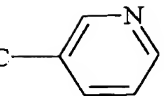
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


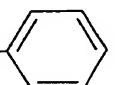

- (iii) C-CN;  
 (iv) C-NO<sub>2</sub>;  
 (v) C-halo [e.g. C-Br, C-Cl or C-F];  
 (vi) C-haloalkyl [e.g. C-CF<sub>3</sub>];

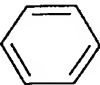
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
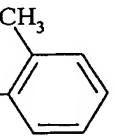
(vii) C-heteroaryl [e.g.  or  ];

(viii) C-OR<sup>4</sup> [e.g. C-OCH<sub>3</sub>, C-OCH<sub>2</sub>CH<sub>3</sub>, C-OCHF<sub>2</sub>, C-OCF<sub>3</sub>, C-O- ,

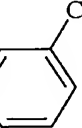

C-O-CH<sub>2</sub>- or C-O-(CH<sub>2</sub>)<sub>2</sub>-N O];



(ix) C-C(=O)R<sup>4</sup> [e.g. C-C(=O)- ];

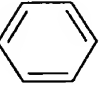
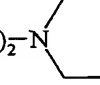
5 (x) C-C(=O)NY<sup>1</sup>Y<sup>2</sup> [e.g. C-C(=O)-NH-CH<sub>3</sub>, C-C(=O)-N(CH<sub>3</sub>)<sub>2</sub>,  
C-C(=O)-NH-CH<sub>2</sub>CH<sub>3</sub>,  
C-C(=O)-NH-CH(CH<sub>3</sub>)<sub>2</sub>, C-C(=O)-NH-C(CH<sub>3</sub>)<sub>2</sub>-CH<sub>2</sub>OH,  
C-C(=O)-NH-CH<sub>2</sub>CH<sub>2</sub>CN, C-C(=O)-NH-CH<sub>2</sub>CH<sub>2</sub>OCH<sub>3</sub>,


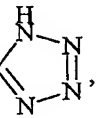
C-C(=O)-NH-CH<sub>2</sub>- , C-C(=O)-NH-CH<sub>2</sub>- ,

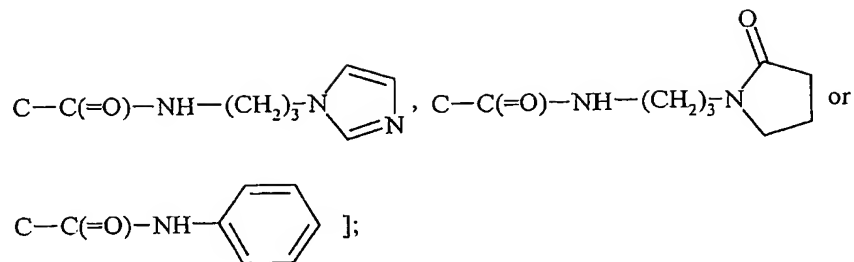
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C-C(=O)-NH-CH<sub>2</sub>- , C-C(=O)-NH-CH<sub>2</sub>- ,

C-C(=O)-NH-CH<sub>2</sub>- , C-C(=O)-NH-CH<sub>2</sub>- ,

C-C(=O)-NH-(CH<sub>2</sub>)<sub>2</sub>- , C-C(=O)-NH-(CH<sub>2</sub>)<sub>2</sub>-N O,

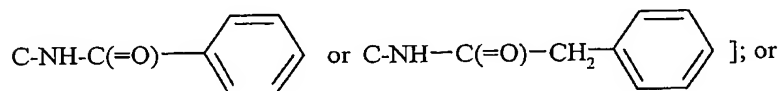
C-C(=O)-NH-(CH<sub>2</sub>)<sub>2</sub>-N , C-C(=O)-NH-(CH<sub>2</sub>)<sub>2</sub>- ,



(xi)  $\text{C}-\text{C}(=\text{O})\text{OR}^4$  [e.g.  $\text{C}-\text{C}(=\text{O})\text{OH}$  or  $\text{C}-\text{C}(=\text{O})\text{OCH}_3$ ];

(xii)  $\text{C}-\text{NHC}(=\text{O})\text{R}^4$  [e.g.  $\text{C}-\text{NHC}(=\text{O})\text{CH}_3$ ,  $\text{C}-\text{NHC}(=\text{O})\text{CH}(\text{CH}_3)_2$ ,

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(xiii)  $\text{C}-\text{CH}(\text{OH})\text{aryl}$  [e.g.  $\text{C}-\text{CH}(\text{OH})-\text{C}_6\text{H}_5$ ];

(xiv)  $\text{C}-\text{S}(\text{O})_2\text{NY}^1\text{Y}^2$  [e.g.  $\text{C}-\text{SO}_2-\text{NH}-\text{CH}_2-\text{C}_6\text{H}_5$ ];

(xv)  $\text{C}-\text{S}(\text{O})_n\text{R}^4$  [e.g.  $\text{C}-\text{SO}_2\text{CH}_3$ ];

are also preferred.

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Compounds of formula (Ixc) in which W represents CH, X represents  $\text{C}-\text{CH}_3$ ,  $\text{C}-\text{CH}_2\text{CH}_3$ ,  $\text{C}-\text{CH}(\text{CH}_3)_2$ ,  $\text{C}-\text{OCH}_3$ ,  $\text{C}-\text{OCH}_2\text{CH}_3$ , C-Br or C-Cl, Y represents  $\text{C}-\text{CH}_3$ ,  $\text{C}-\text{CH}_2\text{CH}_3$ ,  $\text{C}-\text{OCH}_3$ ,

C-Br, C-Cl, C-F,  $\text{C}-\text{C}_6\text{H}_5$  or  $\text{C}-\text{C}(=\text{O})-\text{NH}-\text{CH}_2-\text{C}_6\text{H}_5$  and Z represents CH are also preferred.

15

Compounds of formula (Ixc) in which W represents CH, X represents CH, Y represents  $\text{C}-\text{CH}_3$  and Z represents  $\text{C}-\text{CH}_3$  are also preferred.


Compounds of formula (Ixc) in which W represents CH, X represents  $\text{CR}^2$  and Y represents  $\text{CR}^3$

20 where  $\text{R}^2$  and  $\text{R}^3$  form the group  $-\text{CH}_2-\text{O}-\text{CH}_2-$ , and Z represents CH are also preferred.

Compounds of formula (Ixc) in which W represents CH, X represents  $CR^2$  and Y represents  $CR^3$  where  $R^2$  and  $R^3$  form the group  $-CH_2-CH_2-CH_2-$ , and Z represents CH are also preferred.

Compounds of formula (Ixc) in which  $R^7$  represents hydrogen are preferred.


5

Compounds of formula (Ixc) in which  represents a cyclopentyl, cyclohexyl and cycloheptyl, especially cyclohexyl, ring are preferred.

Compounds of formula (Ixc) in which q is zero are preferred.

10

A preferred group of compounds of the invention are compounds of formula (Ixc) in which:- W represents CH; X represents CH; Y represents CH; Z represents CH or  $C-CH_3$ ;  $R^7$  represents

hydrogen;  represents a cyclopentyl, cyclohexyl or cycloheptyl ring; q is zero; and their

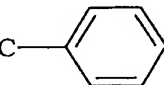
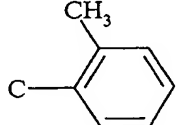
corresponding N-oxides, and their prodrugs, and their acid bioisosteres; and pharmaceutically

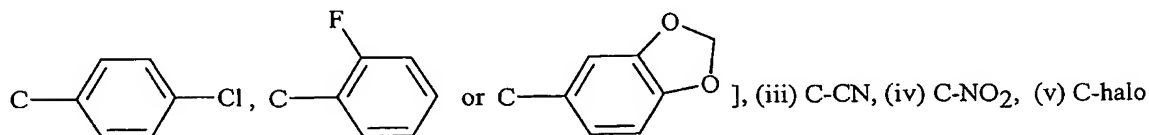
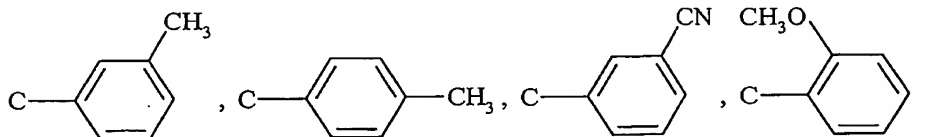
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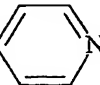
acceptable salts and solvates (e.g. hydrates) of compounds of formula (Ixc) and their N-oxides and their prodrugs, and their acid bioisosteres.

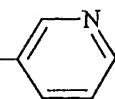
A further preferred group of compounds of the invention are compounds of formula (Ixc) in which:- W represents CH; X represents CH; Z represents CH; Y represents (i)  $C-C_{1-4}alkyl$  [e.g.  $C-CH_3$ ,




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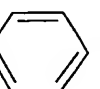
$C-CH_2CH_3$ ,  $C-CH_2CH_2CH_3$  or  $C-CH(CH_3)_2$ ], (ii) C-aryl [e.g.  ,  ,




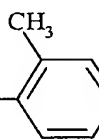
[e.g. C-Br, C-Cl or C-F], (vi) C-haloalkyl [e.g. C-CF<sub>3</sub>], (vii) C-heteroaryl [e.g. C-N or

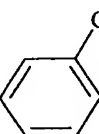

C-N], (viii) C-OR<sup>4</sup> [e.g. C-OCH<sub>3</sub>, C-OCH<sub>2</sub>CH<sub>3</sub>, C-OCHF<sub>2</sub>, C-OCF<sub>3</sub>,



C-O-, C-O-CH<sub>2</sub>- or C-O-(CH<sub>2</sub>)<sub>2</sub>-NO], (ix) C-C(=O)R<sup>4</sup> [e.g.


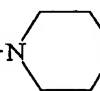
C-C(=O)-], (x) C-C(=O)NY<sup>1</sup>Y<sup>2</sup> [e.g. C-C(=O)-NH-CH<sub>3</sub>, C-C(=O)-N(CH<sub>3</sub>)<sub>2</sub>,


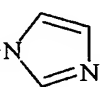
5 C-C(=O)-NH-CH<sub>2</sub>CH<sub>3</sub>, C-C(=O)-NH-CH(CH<sub>3</sub>)<sub>2</sub>, C-C(=O)-NH-C(CH<sub>3</sub>)<sub>2</sub>-CH<sub>2</sub>OH,  
C-C(=O)-NH-CH<sub>2</sub>CH<sub>2</sub>CN, C-C(=O)-NH-CH<sub>2</sub>CH<sub>2</sub>OCH<sub>3</sub>,

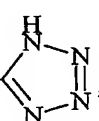
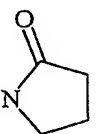
C-C(=O)-NH-CH<sub>2</sub>-, C-C(=O)-NH-CH<sub>2</sub>-,


C-C(=O)-NH-CH<sub>2</sub>-, C-C(=O)-NH-CH<sub>2</sub>-,

C-C(=O)-NH-CH<sub>2</sub>-, C-C(=O)-NH-CH<sub>2</sub>-,

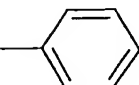
10 C-C(=O)-NH-(CH<sub>2</sub>)<sub>2</sub>-, C-C(=O)-NH-(CH<sub>2</sub>)<sub>2</sub>-N,



C-C(=O)-NH-(CH<sub>2</sub>)<sub>2</sub>-N, C-C(=O)-NH-(CH<sub>2</sub>)<sub>3</sub>-N,

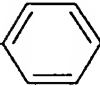
C-C(=O)-NH-(CH<sub>2</sub>)<sub>2</sub>-, C-C(=O)-NH-(CH<sub>2</sub>)<sub>3</sub>-N,


or C-C(=O)-NH-], (xi) -C(=O)OR<sup>4</sup> [e.g. C-C(=O)OH or C-C(=O)OCH<sub>3</sub>], (xii)



$C-NHC(=O)R^4$  [e.g.  $C-NHC(=O)CH_3$  or  $C-NHC(=O)CH(CH_3)_2$ ,  $C-NH-C(=O)-$  or

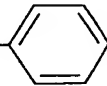
$C-NH-C(=O)-CH_2-$  ], (xiii)  $C-CH(OH)aryl$  [e.g.  $C-CH(OH)-$  ], (xiv)

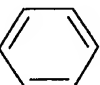

$C-S(O)_2NY^1Y^2$  [e.g.  $C-SO_2-NH-CH_2-$  ] or (xv)  $C-S(O)_nR^4$  [e.g.  $C-SO_2CH_3$ ];  $R^7$

represents hydrogen;  represents a cyclopentyl, cyclohexyl or cycloheptyl ring; q is zero; and

- 5 their corresponding N-oxides, and their prodrugs, and their acid bioisosteres; and pharmaceutically acceptable salts and solvates (e.g. hydrates) of compounds of formula (Ixc) and their N-oxides and their prodrugs, and their acid bioisosteres.


- A further preferred group of compounds of the invention are compounds of formula (Ixc) in which:- W  
10 represents CH; X represents  $C-CH_3$ ,  $C-CH_2CH_3$ ,  $C-CH(CH_3)_2$ ,  $C-OCH_3$ ,  $C-OCH_2CH_3$ ,  $C-Br$  or

$C-Cl$ ; Y represents  $C-CH_3$ ,  $C-CH_2CH_3$ ,  $C-OCH_3$ ,  $C-Br$ ,  $C-Cl$ ,  $C-F$ ,  $C-$  or

$C-C(=O)-NH-CH_2-$  ; Z represents CH;  $R^7$  represents hydrogen;  represents a


- cyclopentyl, cyclohexyl or cycloheptyl ring; q is zero; and their corresponding N-oxides, and their  
prodrugs, and their acid bioisosteres; and pharmaceutically acceptable salts and solvates (e.g. hydrates)  
15 of compounds of formula (Ixc) and their N-oxides and their prodrugs, and their acid bioisosteres.

A further preferred group of compounds of the invention are compounds of formula (Ixc) in which:-W  
represents CH; X represents CH; Y represents  $C-CH_3$ ; Z represents  $C-CH_3$ ;  $R^7$  represents hydrogen;

 represents a cyclopentyl, cyclohexyl or cycloheptyl ring; q is zero; and their corresponding

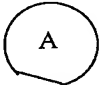
- 20 N-oxides, and their prodrugs, and their acid bioisosteres; and pharmaceutically acceptable salts and solvates (e.g. hydrates) of compounds of formula (Ixc) and their N-oxides and their prodrugs, and their acid bioisosteres.

A further preferred group of compounds of the invention are compounds of formula (Ixb) in which:- W represents CH; X represents  $CR^2$  and Y represents  $CR^3$  where  $R^2$  and  $R^3$  form the group

-CH<sub>2</sub>-O-CH<sub>2</sub>-; Z represents CH;  $R^7$  represents hydrogen;  represents a cyclopentyl,

- 5 cyclohexyl or cycloheptyl ring; q is zero; and their corresponding N-oxides, and their prodrugs, and their acid bioisosteres; and pharmaceutically acceptable salts and solvates (e.g. hydrates) of compounds of formula (Ixc) and their N-oxides and their prodrugs, and their acid bioisosteres.

A further preferred group of compounds of the invention are compounds of formula (Ixb) in which:- W represents CH; X represents  $CR^2$  and Y represents  $CR^3$  where  $R^2$  and  $R^3$  form the group

- 10 -CH<sub>2</sub>-CH<sub>2</sub>-CH<sub>2</sub>-; Z represents CH;  $R^7$  represents hydrogen;  represents a cyclopentyl,

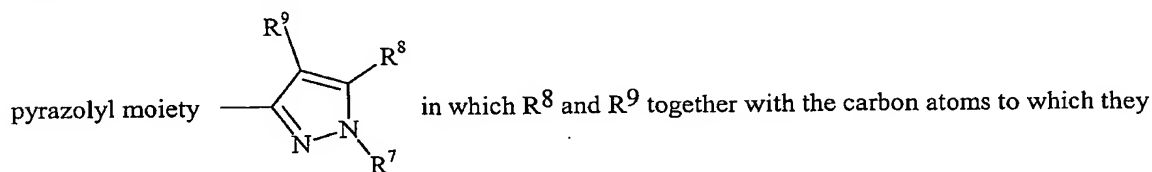
cyclohexyl or cycloheptyl ring; q is zero; and their corresponding N-oxides, and their prodrugs, and their acid bioisosteres; and pharmaceutically acceptable salts and solvates (e.g. hydrates) of compounds of formula (Ixc) and their N-oxides and their prodrugs, and their acid bioisosteres.

- 15 Compounds of formula (Ixc) in which  $R^7$  represents hydrogen and p is zero are particularly preferred.

Compounds of formula (Ixc) in which W is CH, X is C-CH<sub>3</sub>, Y is C-CH<sub>3</sub> and Z is CH are also particularly preferred.

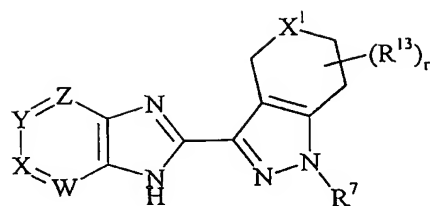
- 20 Compounds of formula (Ixc) in which  is a cyclopentyl ring are particularly preferred.

Another particular group of compounds of the invention are compounds of formula (Ix) wherein  $R^1$  is a



are attached form an optionally substituted heterocycloalkyl ring, i.e. compounds of formula (Ixd):-

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(Ixd)

in which W, X, Y, Z and X are as hereinbefore defined for compounds of formula (Ix), X<sup>1</sup> is O, S,

5 SO<sub>2</sub>, or NY<sup>5</sup> (where Y<sup>5</sup> is hydrogen, R<sup>4</sup>, -C(=O)R<sup>4</sup>, -C(=O)NY<sup>1</sup>Y<sup>2</sup>, -C(=O)OR<sup>4</sup> or -SO<sub>2</sub>R<sup>4</sup>), r is




zero or an integer one or two and R<sup>13</sup> is alkyl or two R<sup>13</sup> groups attached to the same carbon atom form an oxo group; and their corresponding N-oxides, and their prodrugs, and their acid bioisosteres; and pharmaceutically acceptable salts and solvates (e.g. hydrates) of compounds of formula (Ixd) and their N-oxides and their prodrugs, and their acid bioisosteres.

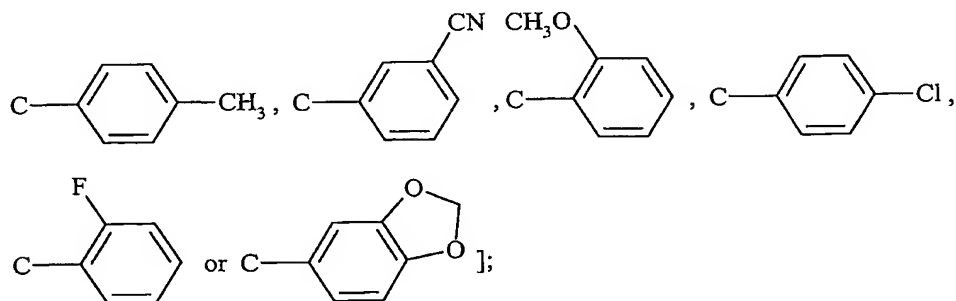
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Compounds of formula (Ixd) in which W represents CH, X represents CH, Y represents CH and Z represents CH or C-CH<sub>3</sub> are preferred.

Compounds of formula (Ixd) in which W represents CH, X represents CH, Z represents CH and Y represents:

(i) C-C<sub>1-4</sub>alkyl [e.g. C-CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>2</sub>CH<sub>3</sub> or C-CH(CH<sub>3</sub>)<sub>2</sub>];

(ii) C-aryl [e.g. , , ,



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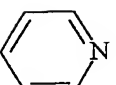
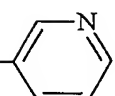
(iii) C-CN;

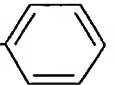
(iv) C-NO<sub>2</sub>;


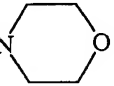
(v) C-halo [e.g. C-Br, C-Cl or C-F];

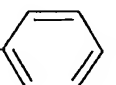
(vi) C-haloalkyl [e.g. C-CF<sub>3</sub>];

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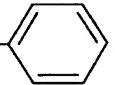
(vii) C-heteroaryl [e.g.  or  ];

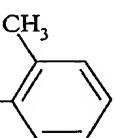
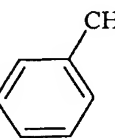
(viii) C-OR<sup>4</sup> [e.g. C-OCH<sub>3</sub>, C-OCH<sub>2</sub>CH<sub>3</sub>, C-OCHF<sub>2</sub>, C-OCF<sub>3</sub>, C-O- ],

C-O-CH<sub>2</sub>- or C-O-(CH<sub>2</sub>)<sub>2</sub>-NO];

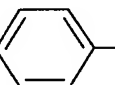
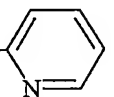
(ix) C-C(=O)R<sup>4</sup> [e.g. C-C(=O)- ];

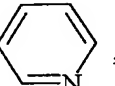
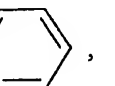
5 (x) C-C(=O)NY<sup>1</sup>Y<sup>2</sup> [e.g. C-C(=O)-NH-CH<sub>3</sub>, C-C(=O)-N(CH<sub>3</sub>)<sub>2</sub>,  
C-C(=O)-NH-CH<sub>2</sub>CH<sub>3</sub>, C-C(=O)-NH-CH(CH<sub>3</sub>)<sub>2</sub>,  
C-C(=O)-NH-C(CH<sub>3</sub>)<sub>2</sub>-CH<sub>2</sub>OH, C-C(=O)-NH-CH<sub>2</sub>CH<sub>2</sub>CN,

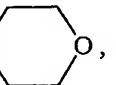

C-C(=O)-NH-CH<sub>2</sub>CH<sub>2</sub>OCH<sub>3</sub>, C-C(=O)-NH-CH<sub>2</sub>- ,

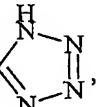
C-C(=O)-NH-CH<sub>2</sub>- , C-C(=O)-NH-CH<sub>2</sub>- ,

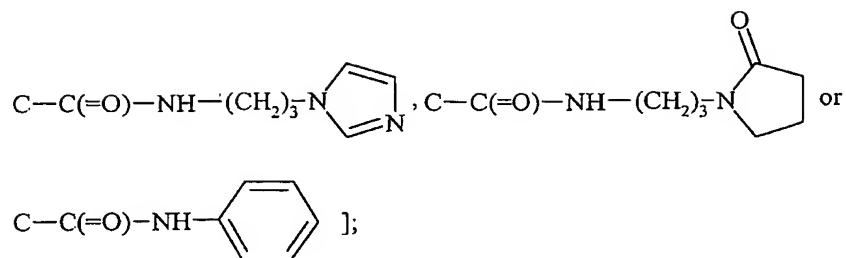
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C-C(=O)-NH-CH<sub>2</sub>--CH<sub>3</sub>, C-C(=O)-NH-CH<sub>2</sub>- ,

C-C(=O)-NH-CH<sub>2</sub>- , C-C(=O)-NH-(CH<sub>2</sub>)<sub>2</sub>- ,

C-C(=O)-NH-(CH<sub>2</sub>)<sub>2</sub>-NO, C-C(=O)-NH-(CH<sub>2</sub>)<sub>2</sub>-N ,

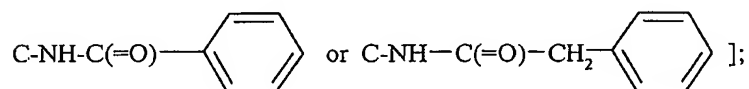
C-C(=O)-NH-(CH<sub>2</sub>)<sub>2</sub>- ,



(xi)  $\text{C}-\text{C}(=\text{O})\text{OR}^4$  [e.g.  $\text{C}-\text{C}(=\text{O})\text{OH}$  or  $\text{C}-\text{C}(=\text{O})\text{OCH}_3$ ];

(xii)  $\text{C}-\text{NHC}(=\text{O})\text{R}^4$  [e.g.  $\text{C}-\text{NHC}(=\text{O})\text{CH}_3$ ,  $\text{C}-\text{NHC}(=\text{O})\text{CH}(\text{CH}_3)_2$ ,

5



(xiii)  $\text{C}-\text{CH}(\text{OH})\text{aryl}$  [e.g.  $\text{C}-\text{CH}(\text{OH})-\text{C}_6\text{H}_5$  ];

(xiv)  $\text{C}-\text{S}(\text{O})_2\text{NY}^1\text{Y}^2$  [e.g.  $\text{C}-\text{SO}_2-\text{NH}-\text{CH}_2-\text{C}_6\text{H}_5$  ]; or

(xv)  $\text{C}-\text{S}(\text{O})_n\text{R}^4$  [e.g.  $\text{C}-\text{SO}_2\text{CH}_3$ ];

are also preferred.

10

Compounds of formula (Ixd) in which W represents CH, X represents  $\text{C}-\text{CH}_3$ ,  $\text{C}-\text{CH}_2\text{CH}_3$ ,  $\text{C}-\text{CH}(\text{CH}_3)_2$ ,  $\text{C}-\text{OCH}_3$ ,  $\text{C}-\text{OCH}_2\text{CH}_3$ , C-Br or C-Cl, Y represents  $\text{C}-\text{CH}_3$ ,  $\text{C}-\text{CH}_2\text{CH}_3$ ,  $\text{C}-\text{OCH}_3$ ,

C-Br, C-Cl, C-F,  $\text{C}-\text{C}_6\text{H}_5$  or  $\text{C}-\text{C}(=\text{O})-\text{NH}-\text{CH}_2-\text{C}_6\text{H}_5$  and Z represents CH are also preferred.

15

Compounds of formula (Ixa) in which W represents CH, X represents CH, Y represents  $\text{C}-\text{CH}_3$  and Z represents  $\text{C}-\text{CH}_3$  are also preferred.

Compounds of formula (Ixd) in which W represents CH, X represents  $\text{CR}^2$  and Y represents  $\text{CR}^3$

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



where  $\text{R}^2$  and  $\text{R}^3$  form the group  $-\text{CH}_2-\text{O}-\text{CH}_2-$ , and Z represents CH are also preferred.

Compounds of formula (Ixd) in which W represents CH, X represents  $CR^2$  and Y represents  $CR^3$  where  $R^2$  and  $R^3$  form the group  $-CH_2-CH_2-CH_2-$ , and Z represents CH are also preferred.

Compounds of formula (Ixd) in which  $R^7$  represents hydrogen are preferred.

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


Compounds of formula (Ixd) in which  $X^1$  is:

- (i) O;
- (ii)  $N-C(=O)R^4$  [e.g.  $N-C(=O)CH_3$ ,  $N-C(=O)CH_2CH(CH_3)_2$ ,  $N-C(=O)CH(CH_3)_2$ , or  $N-C(=O)C(CH_3)_3$  or  $N-(C=O)-$ ];
- 10 (iii)  $N-C(=O)NY^1Y^2$  [e.g.  $N-C(=O)N(CH_3)_2$ ,  $N-C(=O)NCH(CH_3)_2$ ,  $N-C(=O)N(CH_2CH_3)_2$   $N-(C=O)-$ ,  $N-(C=O)-$  or  $N-(C=O)-$ ];
- (iv)  $N-C(=O)OR^4$  [e.g.  $N-C(=O)OCH_3$  or  $N-C(=O)OCH_2CH_3$ ]; or
- (v)  $N-SO_2R^4$  [e.g.  $N-SO_2CH_3$  or  $N-SO_2CH(CH_3)_2$ ];

are preferred.

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
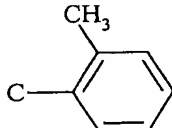
Compounds of formula (Ixd) in which r is zero are preferred.

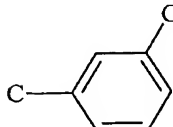
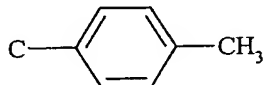
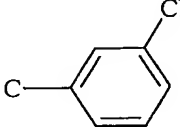
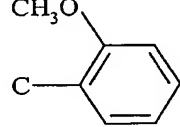
- A preferred group of compounds of the invention are compounds of formula (Ixd) in which:- W represents CH; X represents CH; Y represents CH; Z represents CH or  $C-CH_3$ ;  $R^7$  represents hydrogen;  $X^1$  is (i) O; (ii)  $N-C(=O)R^4$  [e.g.  $N-C(=O)CH_3$ ,  $N-C(=O)CH_2CH(CH_3)_2$ ,  $N-C(=O)CH(CH_3)_2$ , or  $N-C(=O)C(CH_3)_3$  or  $N-(C=O)-$ ]; (iii)  $N-C(=O)NY^1Y^2$  [e.g.  $N-C(=O)N(CH_3)_2$ ,  $N-C(=O)NCH(CH_3)_2$ ,  $N-C(=O)N(CH_2CH_3)_2$   $N-(C=O)-$ ,  $N-(C=O)-$  or  $N-(C=O)-$ ]; (iv)  $N-C(=O)OR^4$  [e.g.  $N-C(=O)OCH_3$  or  $N-C(=O)OCH_2CH_3$ ]; or (v)  $N-SO_2R^4$  [e.g.  $N-SO_2CH_3$  or  $N-SO_2CH(CH_3)_2$ ] and r is zero; and their
- 20 corresponding N-oxides, and their prodrugs, and their acid bioisosteres; and pharmaceutically
- 25

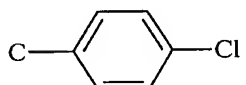
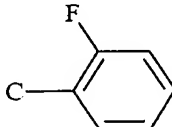
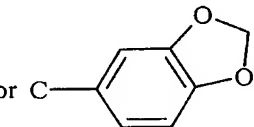
acceptable salts and solvates (e.g. hydrates) of compounds of formula (Ixd) and their N-oxides and their prodrugs, and their acid bioisosteres.

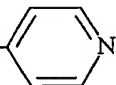
A further preferred group of compounds of the invention are compounds of formula (Ixd) in which:- W

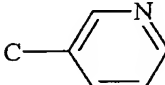
5 represents CH; X represents CH; Z represents CH; Y represents (i) C-C<sub>1-4</sub>alkyl [e.g. C-CH<sub>3</sub>,

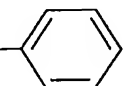
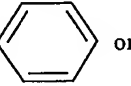
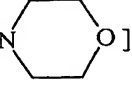
C-CH<sub>2</sub>CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>2</sub>CH<sub>3</sub> or C-CH(CH<sub>3</sub>)<sub>2</sub>], (ii) C-aryl [e.g. C-, C-,

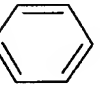
C-, C-, C-, C-,

C-, C- or C-], (iii) C-CN, (iv) C-NO<sub>2</sub>, (v) C-halo

[e.g. C-Br, C-Cl or C-F], (vi) C-haloalkyl [e.g. C-CF<sub>3</sub>], (vii) C-heteroaryl [e.g. C- or

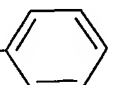
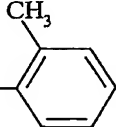
10 C-, (viii) C-OR<sup>4</sup> [e.g. C-OCH<sub>3</sub>, C-OCH<sub>2</sub>CH<sub>3</sub>, C-OCHF<sub>2</sub>, C-OCF<sub>3</sub>,

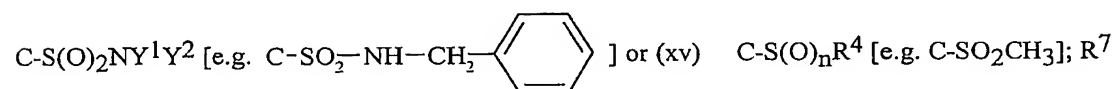
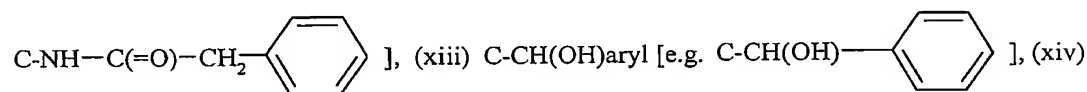
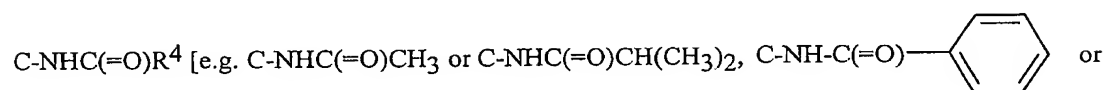
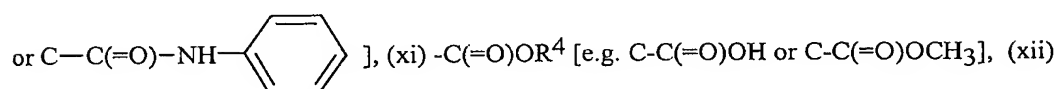
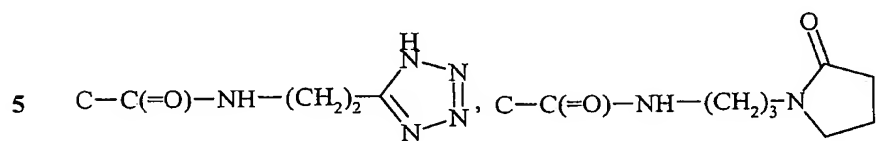
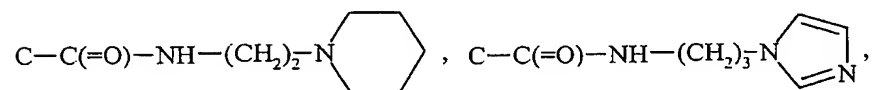
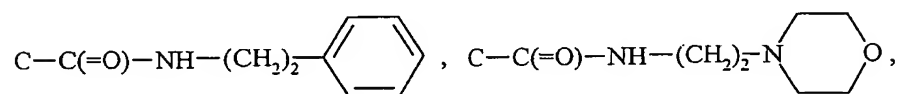
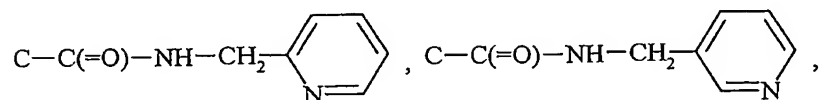
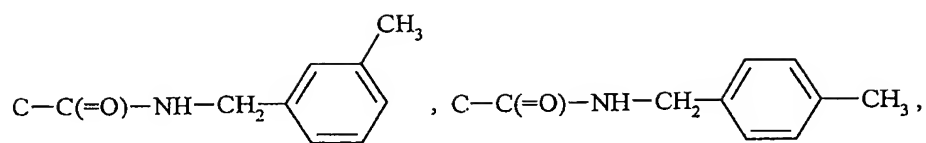
C-O-, C-O-CH<sub>2</sub>- or C-O-(CH<sub>2</sub>)<sub>2</sub>-N-O], (ix) C-C(=O)R<sup>4</sup> [e.g.

C-C(=O)-, (x) C-C(=O)NY<sup>1</sup>Y<sup>2</sup> [e.g. C-C(=O)-NH-CH<sub>3</sub>, C-C(=O)-N(CH<sub>3</sub>)<sub>2</sub>,

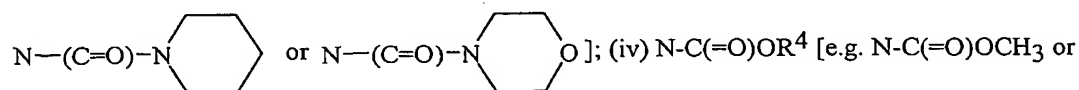
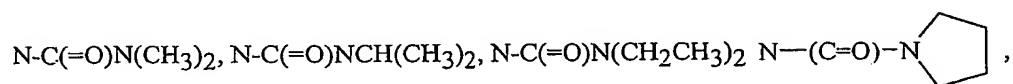
C-C(=O)-NH-CH<sub>2</sub>CH<sub>3</sub>, C-C(=O)-NH-CH(CH<sub>3</sub>)<sub>2</sub>, C-C(=O)-NH-C(CH<sub>3</sub>)<sub>2</sub>-CH<sub>2</sub>OH,

C-C(=O)-NH-CH<sub>2</sub>CH<sub>2</sub>CN, C-C(=O)-NH-CH<sub>2</sub>CH<sub>2</sub>OCH<sub>3</sub>,

15 C-C(=O)-NH-CH<sub>2</sub>-, C-C(=O)-NH-CH<sub>2</sub>-,



10 represents hydrogen;  $\text{X}^1$  is (i) O; (ii)  $\text{N}-\text{C}(=\text{O})\text{R}^4$  [e.g.  $\text{N}-\text{C}(=\text{O})\text{CH}_3$ ,  $\text{N}-\text{C}(=\text{O})\text{CH}_2\text{CH}(\text{CH}_3)_2$ ,  $\text{N}-\text{C}(=\text{O})\text{CH}(\text{CH}_3)_2$ , or  $\text{N}-\text{C}(=\text{O})\text{C}(\text{CH}_3)_3$  or  $\text{N}-(\text{C}=\text{O})-\text{Cyclopropyl}$  ]; (iii)  $\text{N}-\text{C}(=\text{O})\text{NY}^1\text{Y}^2$  [e.g.

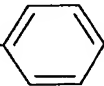


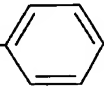
$\text{N}-\text{C}(=\text{O})\text{OCH}_2\text{CH}_3$ ]; or (v)  $\text{N}-\text{SO}_2\text{R}^4$  [e.g.  $\text{N}-\text{SO}_2\text{CH}_3$  or  $\text{N}-\text{SO}_2\text{CH}(\text{CH}_3)_2$ ] and r is zero; and their




corresponding N-oxides, and their prodrugs, and their acid bioisosteres; and pharmaceutically acceptable salts and solvates (e.g. hydrates) of compounds of formula (Ixd) and their N-oxides and their prodrugs, and their acid bioisosteres.


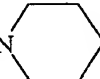

- 5 A further preferred group of compounds of the invention are compounds of formula (Ixd) in which:- W represents CH; X represents C-CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>3</sub>, C-CH(CH<sub>3</sub>)<sub>2</sub>, C-OCH<sub>3</sub>, C-OCH<sub>2</sub>CH<sub>3</sub>, C-Br or

C-Cl; Y represents C-CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>3</sub>, C-OCH<sub>3</sub>, C-Br, C-Cl, C-F, C- or

C-C(=O)-NH-CH<sub>2</sub>-; Z represents CH; R<sup>7</sup> represents hydrogen; X<sup>1</sup> is (i) O; (ii)

N-C(=O)R<sup>4</sup> [e.g. N-C(=O)CH<sub>3</sub>, N-C(=O)CH<sub>2</sub>CH(CH<sub>3</sub>)<sub>2</sub>, N-C(=O)CH(CH<sub>3</sub>)<sub>2</sub>, or N-C(=O)C(CH<sub>3</sub>)<sub>3</sub>

- 10 or N-(C=O)-]; (iii) N-C(=O)NY<sup>1</sup>Y<sup>2</sup> [e.g. N-C(=O)N(CH<sub>3</sub>)<sub>2</sub>, N-C(=O)NCH(CH<sub>3</sub>)<sub>2</sub>,


N-C(=O)N(CH<sub>2</sub>CH<sub>3</sub>)<sub>2</sub> N-(C=O)-N, N-(C=O)-N or N-(C=O)-NO];



(iv) N-C(=O)OR<sup>4</sup> [e.g. N-C(=O)OCH<sub>3</sub> or N-C(=O)OCH<sub>2</sub>CH<sub>3</sub>]; or (v) N-SO<sub>2</sub>R<sup>4</sup> [e.g. N-SO<sub>2</sub>CH<sub>3</sub> or N-SO<sub>2</sub>CH(CH<sub>3</sub>)<sub>2</sub>] and r is zero; and their corresponding N-oxides, and their prodrugs, and their acid


- 15 bioisosteres; and pharmaceutically acceptable salts and solvates (e.g. hydrates) of compounds of formula (Ixd) and their N-oxides and their prodrugs, and their acid bioisosteres.

A further preferred group of compounds of the invention are compounds of formula (Ixd) in which:-W represents CH; X represents CH; Y represents C-CH<sub>3</sub>; Z represents C-CH<sub>3</sub>; R<sup>7</sup> represents hydrogen;

X<sup>1</sup> is (i) O; (ii) N-C(=O)R<sup>4</sup> [e.g. N-C(=O)CH<sub>3</sub>, N-C(=O)CH<sub>2</sub>CH(CH<sub>3</sub>)<sub>2</sub>, N-C(=O)CH(CH<sub>3</sub>)<sub>2</sub>, or

- 20 N-C(=O)C(CH<sub>3</sub>)<sub>3</sub> or N-(C=O)-]; (iii) N-C(=O)NY<sup>1</sup>Y<sup>2</sup> [e.g. N-C(=O)N(CH<sub>3</sub>)<sub>2</sub>, N-

C(=O)NCH(CH<sub>3</sub>)<sub>2</sub>, N-C(=O)N(CH<sub>2</sub>CH<sub>3</sub>)<sub>2</sub> N-(C=O)-N, N-(C=O)-N or

N-(C=O)-NO]; (iv) N-C(=O)OR<sup>4</sup> [e.g. N-C(=O)OCH<sub>3</sub> or N-C(=O)OCH<sub>2</sub>CH<sub>3</sub>]; or (v)

N-SO<sub>2</sub>R<sup>4</sup> [e.g. N-SO<sub>2</sub>CH<sub>3</sub> or N-SO<sub>2</sub>CH(CH<sub>3</sub>)<sub>2</sub>] and r is zero; and their corresponding N-oxides, and their prodrugs, and their acid bioisosteres; and pharmaceutically acceptable salts and solvates (e.g.

hydrates) of compounds of formula (Ixd) and their N-oxides and their prodrugs, and their acid bioisosteres.

A further preferred group of compounds of the invention are compounds of formula (Ixd) in which:-W

- 5 represents CH; X represents  $CR^2$  and Y represents  $CR^3$  where  $R^2$  and  $R^3$  form the group  $-CH_2-O-CH_2-$ ; Z represents CH;  $R^7$  represents hydrogen;  $X^1$  is (i) O; (ii)  $N-C(=O)R^4$  [e.g.  $N-C(=O)CH_3$ ,  $N-C(=O)CH_2CH(CH_3)_2$ ,  $N-C(=O)CH(CH_3)_2$ , or  $N-C(=O)C(CH_3)_3$  or  $N-(C=O)-\triangle$ ]; (iii)  $N-C(=O)NY^1Y^2$  [e.g.  $N-C(=O)N(CH_3)_2$ ,  $N-C(=O)NCH(CH_3)_2$ ,  $N-C(=O)N(CH_2CH_3)_2$ ,  $N-(C=O)-N-\triangle$ ,  $N-(C=O)-N-\square$  or  $N-(C=O)-N-\square O$ ];
- 10 (iv)  $N-C(=O)OR^4$  [e.g.  $N-C(=O)OCH_3$  or  $N-C(=O)OCH_2CH_3$ ]; or (v)  $N-SO_2R^4$  [e.g.  $N-SO_2CH_3$  or  $N-SO_2CH(CH_3)_2$ ] and r is zero; and their corresponding N-oxides, and their prodrugs, and their acid bioisosteres; and pharmaceutically acceptable salts and solvates (e.g. hydrates) of compounds of formula (Ixd) and their N-oxides and their prodrugs, and their acid bioisosteres.




- 15 A further preferred group of compounds of the invention are compounds of formula (Ixd) in which:-W represents CH; X represents  $CR^2$  and Y represents  $CR^3$  where  $R^2$  and  $R^3$  form the group  $-CH_2-CH_2-CH_2-$ ; Z represents CH;  $R^7$  represents hydrogen;  $X^1$  is (i) O; (ii)  $N-C(=O)R^4$  [e.g.  $N-C(=O)CH_3$ ,  $N-C(=O)CH_2CH(CH_3)_2$ ,  $N-C(=O)CH(CH_3)_2$ , or  $N-C(=O)C(CH_3)_3$  or  $N-(C=O)-\triangle$ ]; (iii)  $N-C(=O)NY^1Y^2$  [e.g.  $N-C(=O)N(CH_3)_2$ ,  $N-C(=O)NCH(CH_3)_2$ ,  $N-C(=O)N(CH_2CH_3)_2$ ,  $N-(C=O)-N-\triangle$ ,  $N-(C=O)-N-\square$  or  $N-(C=O)-N-\square O$ ];
- 20 (iv)  $N-C(=O)OR^4$  [e.g.  $N-C(=O)OCH_3$  or  $N-C(=O)OCH_2CH_3$ ]; or (v)  $N-SO_2R^4$  [e.g.  $N-SO_2CH_3$  or  $N-SO_2CH(CH_3)_2$ ] and r is zero; and their corresponding N-oxides, and their prodrugs, and their acid bioisosteres; and pharmaceutically acceptable salts and solvates (e.g. hydrates) of compounds of formula (Ixd) and their N-oxides and their prodrugs, and their acid bioisosteres.

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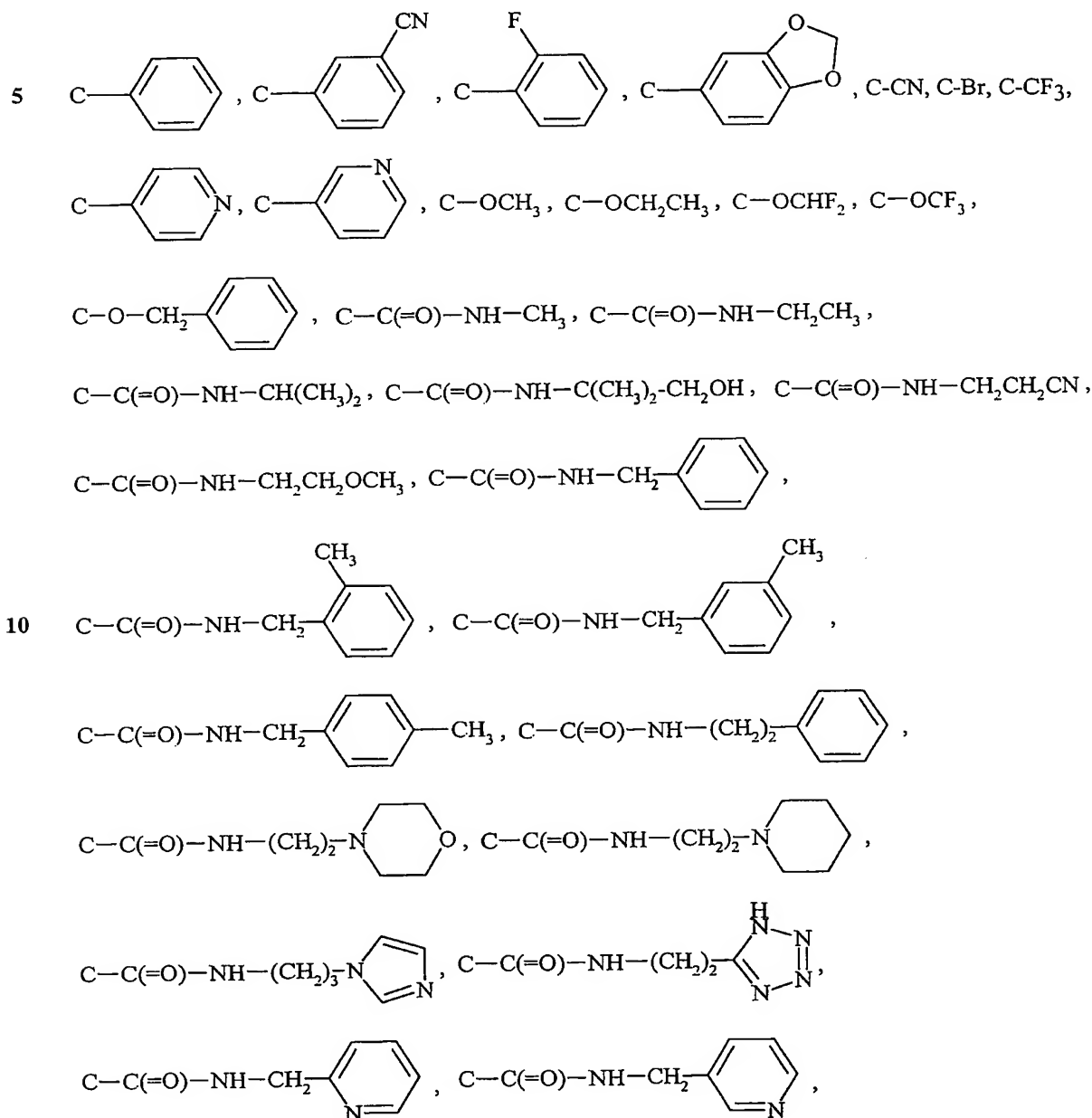
Compounds of formula (Ixd) in which  $X^1$  is  $N-C(=O)CH(CH_3)_2$ ,  $N-C(=O)CH_2CH(CH_3)_2$ ,

$N-C(=O)C(CH_3)_3$ ;  $N-(C=O)-\triangle$ ,  $N-C(=O)N(CH_3)_2$ ,  $N-C(=O)NCH(CH_3)_2$ ,

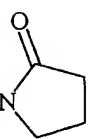

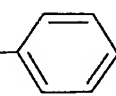
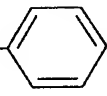
-91-

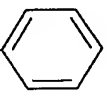
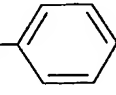
$N-C(=O)N(CH_2CH_3)_2$ ,  $N-(C=O)-N$  ,  $N-(C=O)-N$  ,  $N-(C=O)-N$  ,  
 $N-C(=O)OCH_3$  or  $N-C(=O)OCH_2CH_3$  and  $r$  is zero are particularly preferred.

Compounds of formula (Ixd) in which  $W$  is  $CH$ ,  $X$  is  $CH$ ,  $Y$  is  $CH$ ,  $C-CH_2CH_3$ ,  $C-CH_2CH_2CH_3$ ,



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$\text{C}-\text{C}(=\text{O})-\text{NH}-(\text{CH}_2)_3\text{N}$  ,  $\text{C}-\text{C}(=\text{O})-\text{NH}$  ,  $\text{C}-\text{C}(=\text{O})\text{OCH}_3$ ,  $\text{C}-\text{C}(=\text{O})\text{OH}$ ,  
 $\text{C}-\text{CH}(\text{OH})$  ,  $\text{C}-\text{SO}_2\text{CH}_3$  or  $\text{C}-\text{SO}_2-\text{NH}-\text{CH}_2$   and Z is CH are particularly preferred.


- 5 Compounds of formula (Ixd) in which W is CH, X is C-CH<sub>3</sub> or C-CH<sub>2</sub>CH<sub>3</sub>, Y is C-CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>3</sub>, C-CH(CH<sub>3</sub>)<sub>2</sub>, C-Br, C-Cl, C-F, C-, C-C(=O)-NH-CH<sub>2</sub>-, and Z is CH are also particularly preferred.



- Compounds of formula (Ixa) in which W is CH, X is C-OCH<sub>3</sub>, Y is CH, C-CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>3</sub>, C-Cl or C-OCH<sub>3</sub> and Z is CH are also particularly preferred.
- 10

Compounds of formula (Ixd) in which W is CH, X is C-OCH<sub>2</sub>CH<sub>3</sub>, Y is C-F and Z is CH are also particularly preferred.

- 15 Compounds of formula (Ixd) in which W represents CH, X represents CR<sup>2</sup> and Y represents CR<sup>3</sup> where R<sup>2</sup> and R<sup>3</sup> form the group -CH<sub>2</sub>-CH<sub>2</sub>-CH<sub>2</sub>-, and Z represents CH are also particularly preferred.

- Compounds of formula (Ixd) in which W represents CH, X represents CR<sup>2</sup> and Y represents CR<sup>3</sup> where R<sup>2</sup> and R<sup>3</sup> form the group -CH<sub>2</sub>-O-CH<sub>2</sub>-, and Z represents CH are also particularly preferred.
- 20

Compounds of formula (Ixd) in which X<sup>1</sup> is N-(C=O)-, N-C(=O)N(CH<sub>3</sub>)<sub>2</sub>,

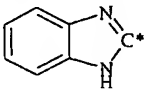
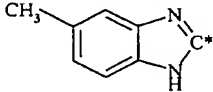
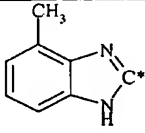
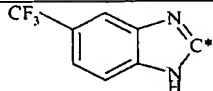
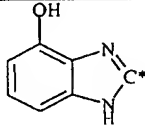
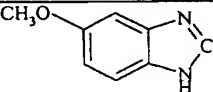
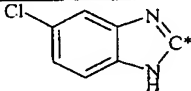
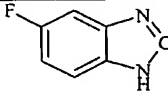
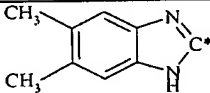
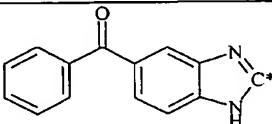
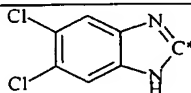
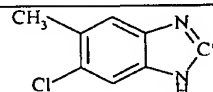
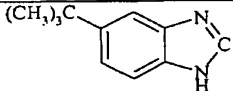
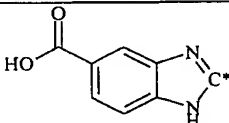
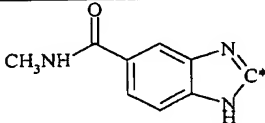
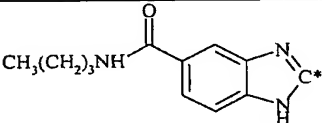
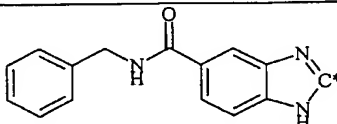
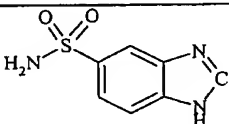
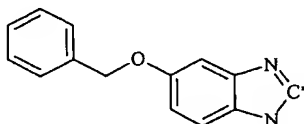
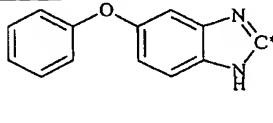
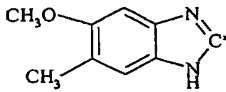
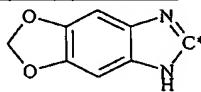
N-C(=O)NCH(CH<sub>3</sub>)<sub>2</sub>, N-C(=O)N(CH<sub>2</sub>CH<sub>3</sub>)<sub>2</sub>, N-(C=O)-N or N-(C=O)-N and r

is zero are especially preferred.

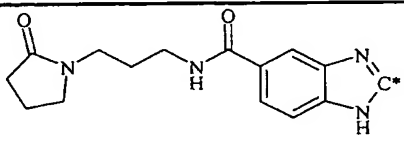
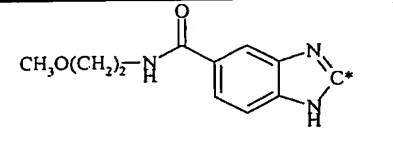
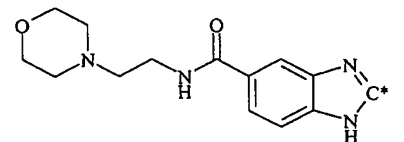
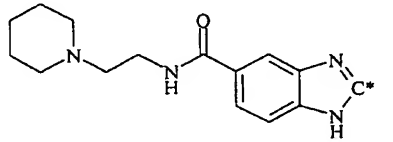
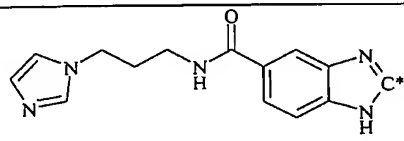
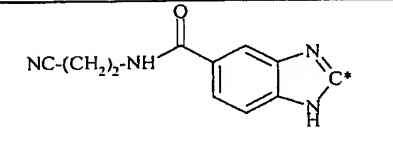
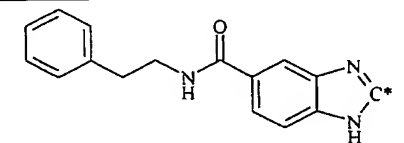
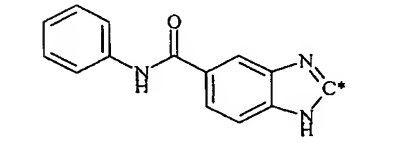
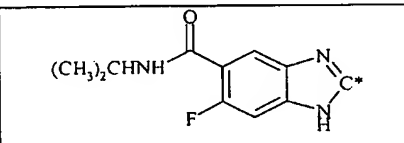
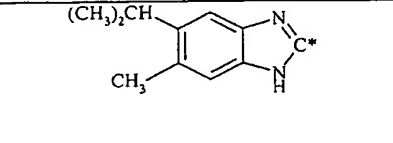
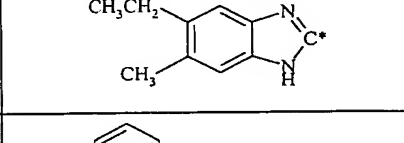
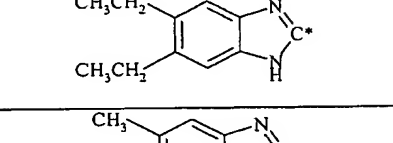
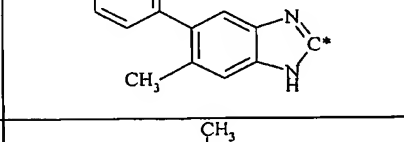
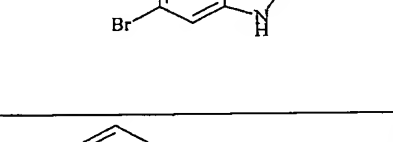
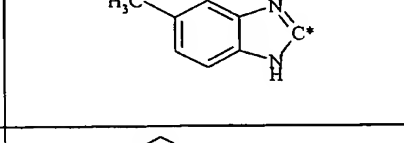
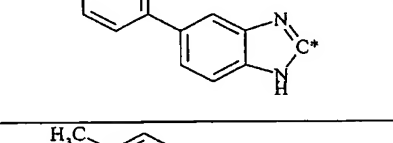
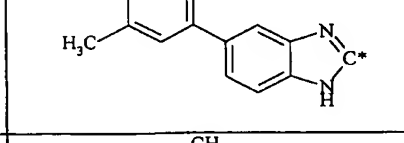
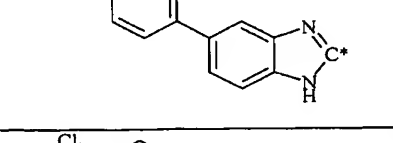
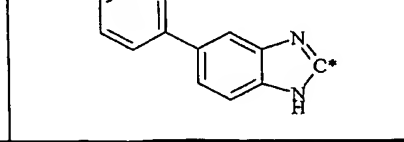
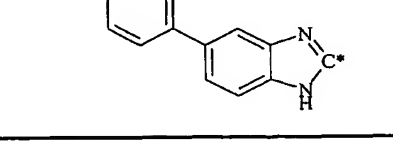
Compounds of formula (Ixd) in which W represents CH, X represents C-CH<sub>3</sub>, Y represents C-CH<sub>3</sub> or C-Cl and Z represents CH are especially preferred.

- 5 Particular compounds of the invention of formula (Ix) are selected from the compounds formed by joining the carbon atom (C\*) of one of the benzoimidazole, imidazo[4,5-b]pyridine, imidazo[4,5-c]pyridine or imidazo[4,5-b]pyrazine fragments (A1 to A110) shown in Table 1 to the carbon atom (\*C) in the heteroaryl moiety of one of the fragments (B1 to B168) shown in Table 2.
- 10 Particular compounds of the invention of formula (Ixa) are selected from the compounds formed by joining the carbon atom (C\*) of one of the benzoimidazole, imidazo[4,5-b]pyridine, imidazo[4,5-c]pyridine or imidazo[4,5-b]pyrazine fragments (A1 to A110) shown in Table 1 to the carbon atom (\*C) in the pyrazole ring of one of the fragments (B1 to B48, B74 to B107, B124 to B127, 130 to 142 or 144 to 150) shown in Table 2.
- 15 Particular compounds of the invention of formula (Ixb) are also selected from the compounds formed by joining the carbon atom (C\*) of one of the benzoimidazole, imidazo[4,5-b]pyridine, imidazo[4,5-c]pyridine or imidazo[4,5-b]pyrazine fragments (A1 to A110) shown in Table 1 to the carbon atom (\*C) in the five membered ring of one of the fragments (B63 to B73, B108 to B114, B128 or B151) shown in Table 2.
- 20 Particular compounds of the invention of formula (Ixc) are selected from the compounds formed by joining the carbon atom (C\*) of one of the benzoimidazole, imidazo[4,5-b]pyridine, imidazo[4,5-c]pyridine or imidazo[4,5-b]pyrazine fragments (A1 to A110) shown in Table 1 to the carbon atom (\*C) in the five membered ring of one of the fragments (B56, B59 or B129) shown in Table 2.
- 25 Particular compounds of the invention of formula (Ixd) are selected from the compounds formed by joining the carbon atom (C\*) of one of the benzoimidazole, imidazo[4,5-b]pyridine, imidazo[4,5-c]pyridine or imidazo[4,5-b]pyrazine fragments (A1 to A110) shown in Table 1 to the carbon atom (\*C) in the five membered ring of one of the fragments (B115 to B123 or B157) shown in Table 2.
- 30

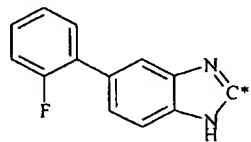
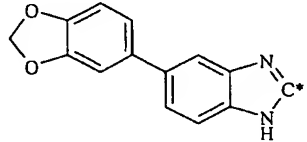
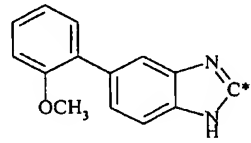
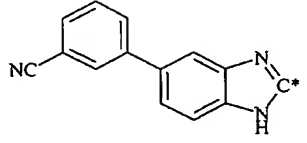
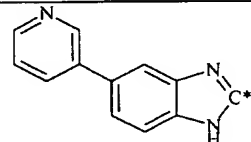
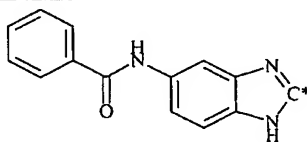
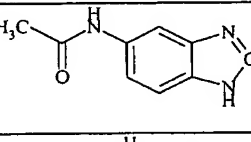
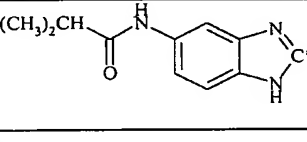
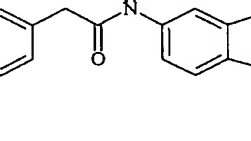
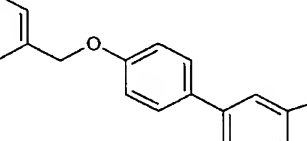
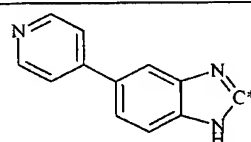
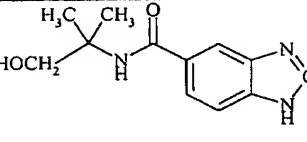
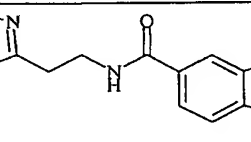
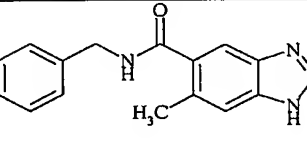
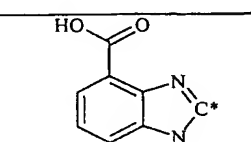
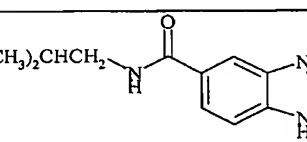
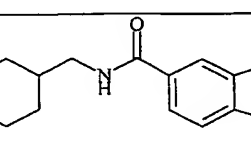
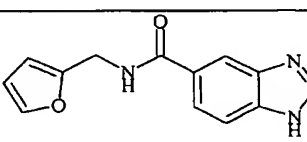
TABLE 1

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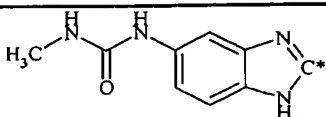
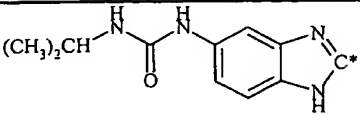
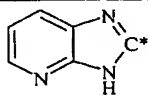
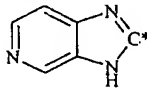
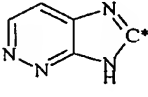
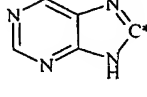
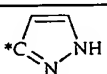
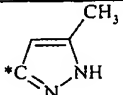
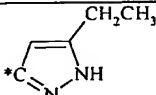
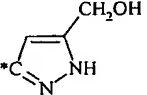
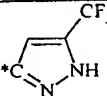
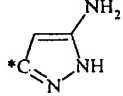
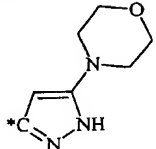
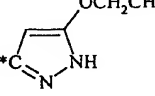
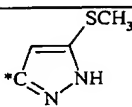
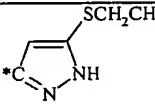
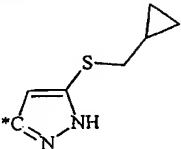
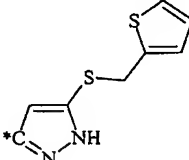
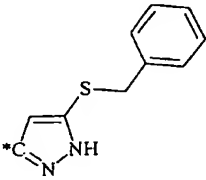
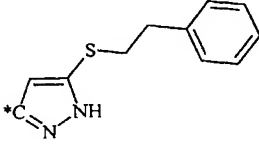
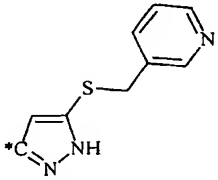
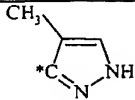
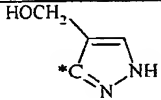
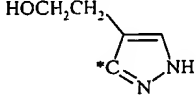
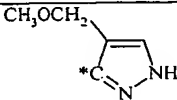
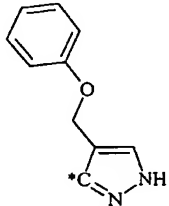
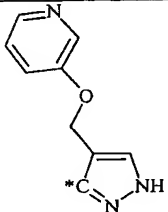
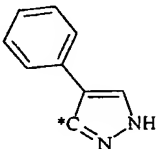
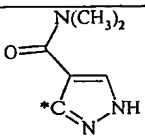
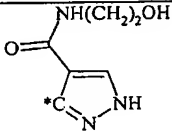
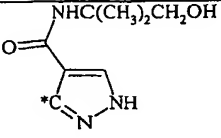
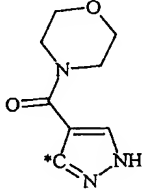
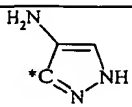
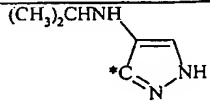
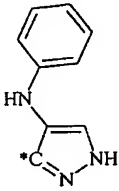
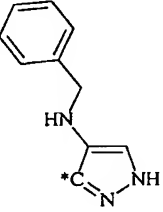
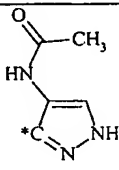
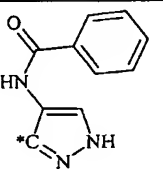
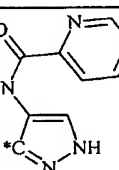
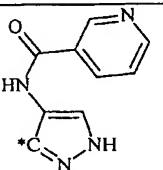
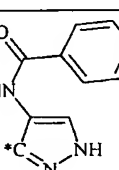
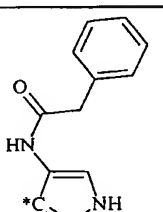
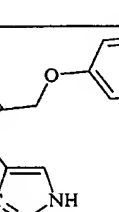
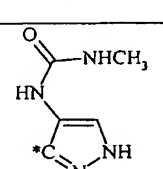
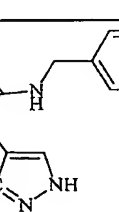
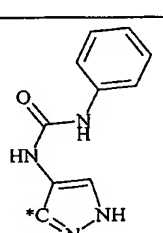
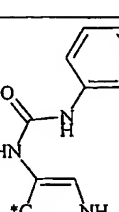
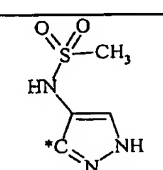
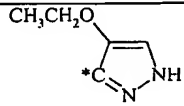
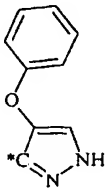
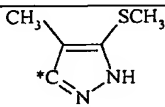
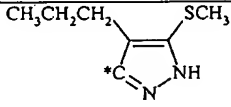
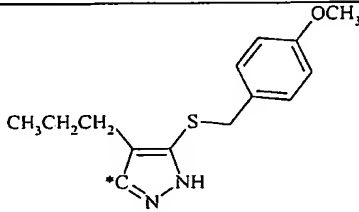
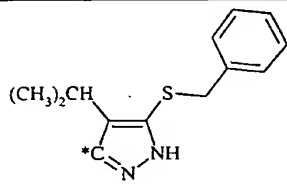
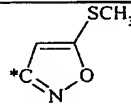
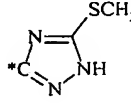
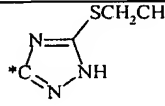

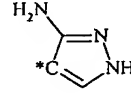
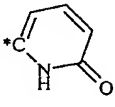
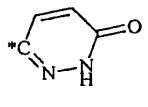
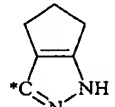
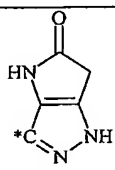
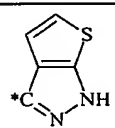
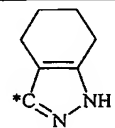
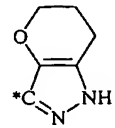
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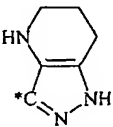
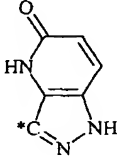
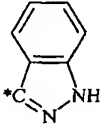
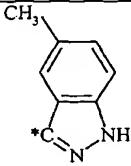
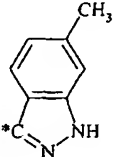
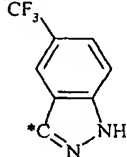
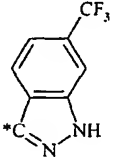
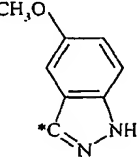
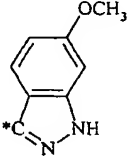
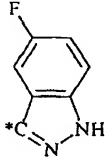
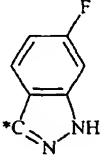
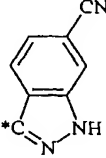
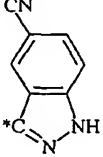
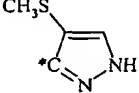
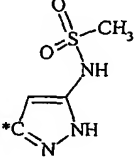
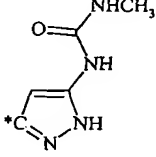
TABLE 2

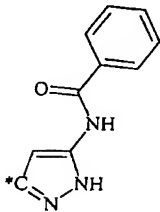
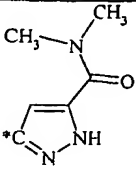
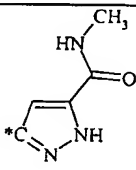
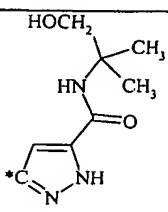
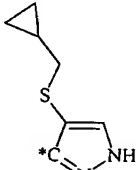
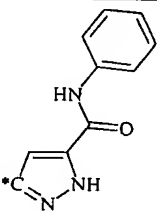
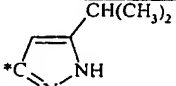
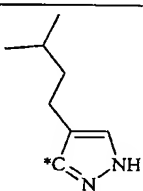
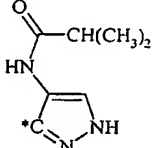
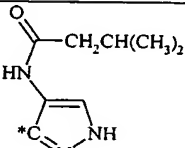
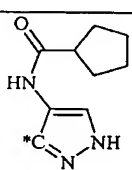
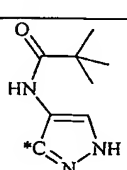
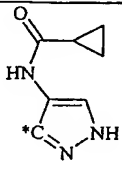
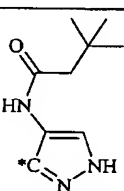
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B3		B4	
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B7		B8	
B9		B10	
B11		B12	

B13		B14	
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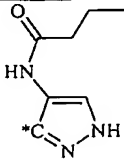
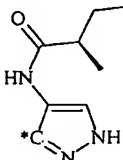
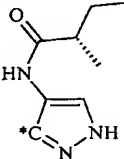
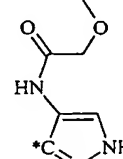
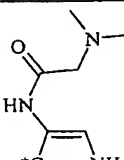
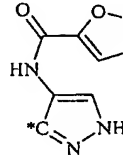
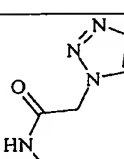
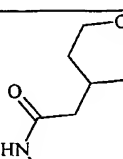
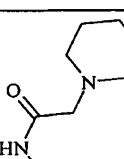
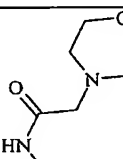
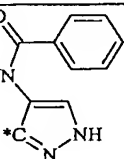
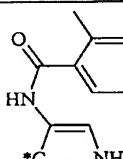
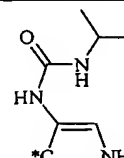
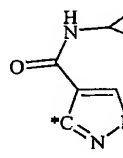
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B31	 <chem>CC(=O)Nc1c[nH]c1NC2=CC=CC=C2</chem>	B32	 <chem>O=C(c1ccccc1)Nc1c[nH]c1NC2=CC=CC=C2</chem>
B33	 <chem>Nc1c[nH]c1NC2=CC=CC=C2</chem>	B34	 <chem>Nc1c[nH]c1NC2=CC=CC=C2</chem>
B35	 <chem>Nc1c[nH]c1NC2=CC=CC=C2</chem>	B36	 <chem>Nc1c[nH]c1NC2=CC=CC=C2</chem>
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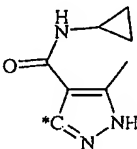
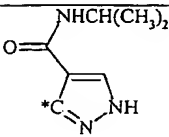
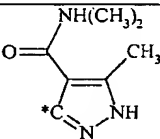
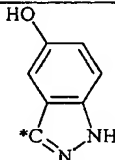
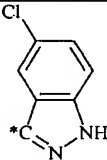
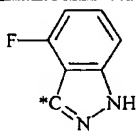
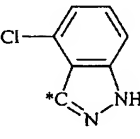
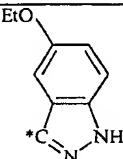
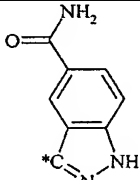
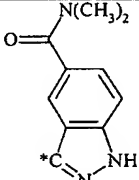
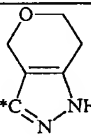
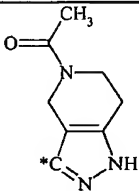
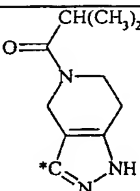
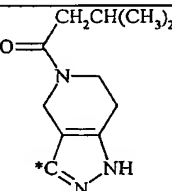
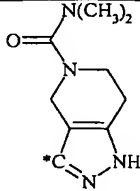
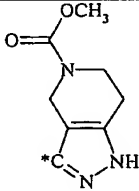
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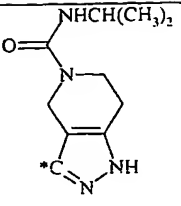
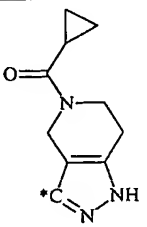
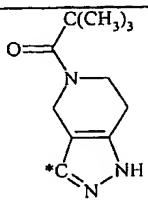
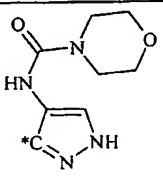
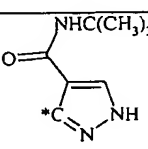
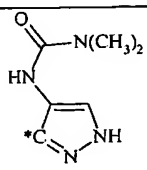
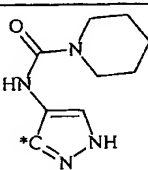
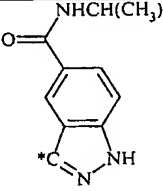
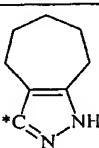
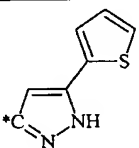
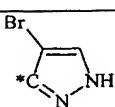
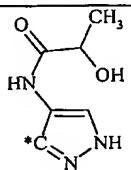
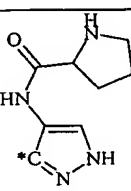
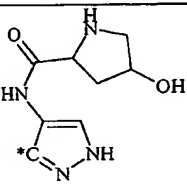
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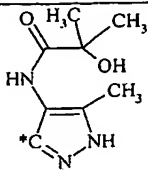
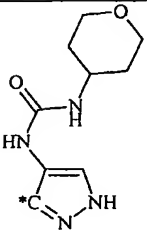
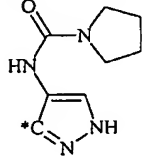
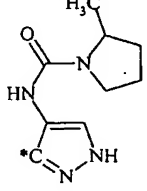
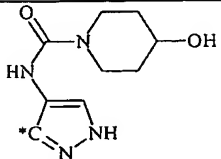
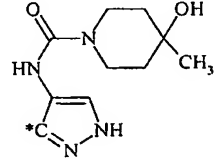
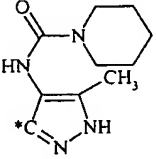
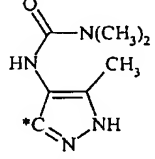
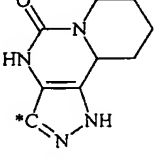
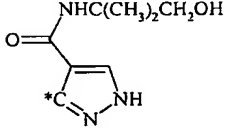
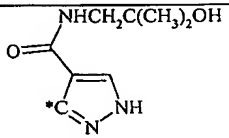
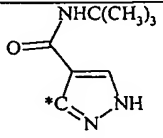
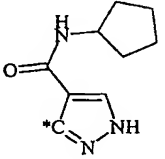
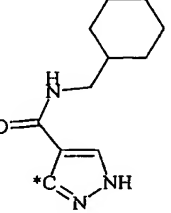
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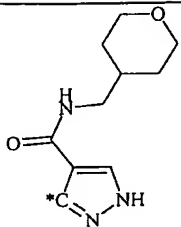
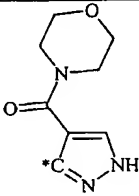
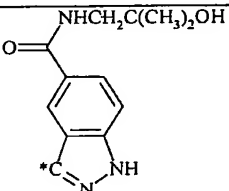
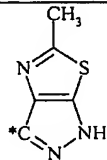
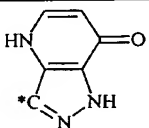
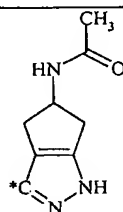
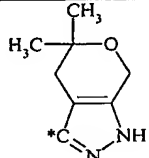
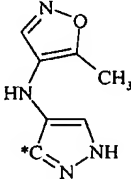
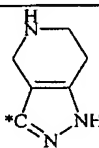
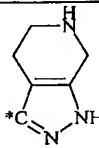
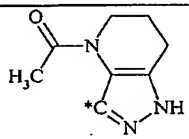
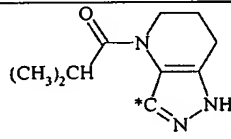
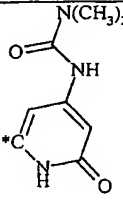
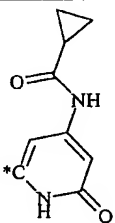


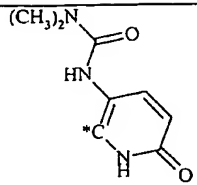
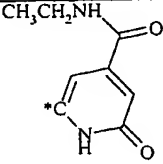
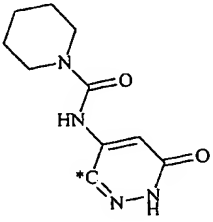
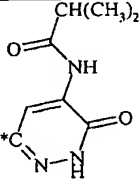

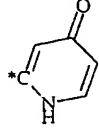

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B93		B94	
B95		B96	
B97		B98	
B99		B100	
B101		B102	
B103		B104	

B105		B106	
B107		B108	
B109		B110	
B111		B112	
B113		B114	
B115		B116	
B117		B118	
B119		B120	

B121		B122	
B123		B124	
B125		B126	
B127		B128	
B129		B130	
B131		B132	
B133		B134	

B135		B136	
B137		B138	
B139		B140	
B141		B142	
B143		B144	
B145		B146	
B147		B148	

B149		B150	
B151		B152	
B153		B154	
B155		B156	
B157		B158	
B159		B160	
B161		B162	

B163		B164	
B165		B166	
B167		B168	
B169			

Particular compounds of the invention of formula (Ix) denoted as the product of the combination of group A1 to A110 in Table 1 with B1 to B169 in Table 2 are illustrated below:

A1-B1;	A1-B2;	A1-B3;	A1-B4;	A1-B5;	A1-B6;
A1-B7;	A1-B8;	A1-B9;	A1-B10;	A1-B11;	A1-B12;
A1-B13;	A1-B14;	A1-B15;	A1-B16;	A1-B17;	A1-B18;
A1-B19;	A1-B20;	A1-B21;	A1-B22;	A1-B23;	A1-B24;
A1-B25;	A1-B26;	A1-B27;	A1-B28;	A1-B29;	A1-B30;
A1-B31;	A1-B32;	A1-B33;	A1-B34;	A1-B35;	A1-B36;
A1-B37;	A1-B38;	A1-B39;	A1-B40;	A1-B41;	A1-B42;
A1-B43;	A1-B44;	A1-B45;	A1-B46;	A1-B47;	A1-B48;
A1-B49;	A1-B50;	A1-B51;	A1-B52;	A1-B53;	A1-B54;
A1-B55;	A1-B56;	A1-B57;	A1-B58;	A1-B59;	A1-B60;
A1-B61;	A1-B62;	A1-B63;	A1-B64;	A1-B65;	A1-B66;
A1-B67;	A1-B68;	A1-B69;	A1-B70;	A1-B71;	A1-B72;
A1-B73;	A1-B74;	A1-B75;	A1-B76;	A1-B77;	A1-B78;
A1-B79;	A1-B80;	A1-B81;	A1-B82;	A1-B83;	A1-B84;
A1-B85;	A1-B86;	A1-B87;	A1-B88;	A1-B89;	A1-B90;

A1-B91;	A1-B92;	A1-B93;	A1-B94;	A1-B95;	A1-B96;
A1-B97;	A1-B98;	A1-B99;	A1-B100;	A1-B101;	A1-B102;
A1-B103;	A1-B104;	A1-B105;	A1-B106;	A1-B107;	A1-B108;
A1-B109;	A1-B110;	A1-B111;	A1-B112;	A1-B113;	A1-B114;
A1-B115;	A1-B116;	A1-B117;	A1-B118;	A1-B119;	A1-B120;
A1-B121;	A1-B122;	A1-B123;	A1-B124;	A1-B125;	A1-B126;
A1-B127;	A1-B128;	A1-B129;	A1-B130;	A1-B131;	A1-B132;
A1-B133;	A1-B134;	A1-B135;	A1-B136;	A1-B137;	A1-B138;
A1-B139;	A1-B140;	A1-B141;	A1-B142;	A1-B143;	A1-B144;
A1-B145;	A1-B146;	A1-B147;	A1-B148;	A1-B149;	A1-B150;
A1-B151;	A1-B152;	A1-B153;	A1-B154;	A1-B155;	A1-B156;
A1-B157;	A1-B158;	A1-B159;	A1-B160;	A1-B161;	A1-B162;
A1-B163;	A1-B164;	A1-B165;	A1-B166;	A1-B167;	A1-B168;
A1-B169;	A2-B1;	A2-B2;	A2-B3;	A2-B4;	A2-B5;
A2-B6;	A2-B7;	A2-B8;	A2-B9;	A2-B10;	A2-B11;
A2-B12;	A2-B13;	A2-B14;	A2-B15;	A2-B16;	A2-B17;
A2-B18;	A2-B19;	A2-B20;	A2-B21;	A2-B22;	A2-B23;
A2-B24;	A2-B25;	A2-B26;	A2-B27;	A2-B28;	A2-B29;
A2-B30;	A2-B31;	A2-B32;	A2-B33;	A2-B34;	A2-B35;
A2-B36;	A2-B37;	A2-B38;	A2-B39;	A2-B40;	A2-B41;
A2-B42;	A2-B43;	A2-B44;	A2-B45;	A2-B46;	A2-B47;
A2-B48;	A2-B49;	A2-B50;	A2-B51;	A2-B52;	A2-B53;
A2-B54;	A2-B55;	A2-B56;	A2-B57;	A2-B58;	A2-B59;
A2-B60;	A2-B61;	A2-B62;	A2-B63;	A2-B64;	A2-B65;
A2-B66;	A2-B67;	A2-B68;	A2-B69;	A2-B70;	A2-B71;
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A2-B102;	A2-B103;	A2-B104;	A2-B105;	A2-B106;	A2-B107;
A2-B108;	A2-B109;	A2-B110;	A2-B111;	A2-B112;	A2-B113;
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A2-B126;	A2-B127;	A2-B128;	A2-B129;	A2-B130;	A2-B131;

A2-B132;	A2-B133;	A2-B134;	A2-B135;	A2-B136;	A2-B137;
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A2-B144;	A2-B145;	A2-B146;	A2-B147;	A2-B148;	A2-B149;
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A2-B156;	A2-B157;	A2-B158;	A2-B159;	A2-B160;	A2-B161;
A2-B162;	A2-B163;	A2-B164;	A2-B165;	A2-B166;	A2-B167;
A2-B168;	A2-B169;	A3-B1;	A3-B2;	A3-B3;	A3-B4;
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A3-B17;	A3-B18;	A3-B19;	A3-B20;	A3-B21;	A3-B22;
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A5-B33;	A5-B34;	A5-B35;	A5-B36;	A5-B37;	A5-B38;
A5-B39;	A5-B40;	A5-B41;	A5-B42;	A5-B43;	A5-B44;

A5-B45;	A5-B46;	A5-B47;	A5-B48;	A5-B49;	A5-B50;
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A5-B57;	A5-B58;	A5-B59;	A5-B60;	A5-B61;	A5-B62;
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A5-B75;	A5-B76;	A5-B77;	A5-B78;	A5-B79;	A5-B80;
A5-B81;	A5-B82;	A5-B83;	A5-B84;	A5-B85;	A5-B86;
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A5-B93;	A5-B94;	A5-B95;	A5-B96;	A5-B97;	A5-B98;
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A5-B105;	A5-B106;	A5-B107;	A5-B108;	A5-B109;	A5-B110;
A5-B111;	A5-B112;	A5-B113;	A5-B114;	A5-B115;	A5-B116;
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A5-B123;	A5-B124;	A5-B125;	A5-B126;	A5-B127;	A5-B128;
A5-B129;	A5-B130;	A5-B131;	A5-B132;	A5-B133;	A5-B134;
A5-B135;	A5-B136;	A5-B137;	A5-B138;	A5-B139;	A5-B140;
A5-B141;	A5-B142;	A5-B143;	A5-B144;	A5-B145;	A5-B146;
A5-B147;	A5-B148;	A5-B149;	A5-B150;	A5-B151;	A5-B152;
A5-B153;	A5-B154;	A5-B155;	A5-B156;	A5-B157;	A5-B158;
A5-B159;	A5-B160;	A5-B161;	A5-B162;	A5-B163;	A5-B164;
A5-B165;	A5-B166;	A5-B167;	A5-B168;	A5-B169;	A6-B1;
A6-B2;	A6-B3;	A6-B4;	A6-B5;	A6-B6;	A6-B7;
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A6-B38;	A6-B39;	A6-B40;	A6-B41;	A6-B42;	A6-B43;
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A106-B124;	A106-B125;	A106-B126;	A106-B127;	A106-B128;	A106-B129;
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A107-B9;	A107-B10;	A107-B11;	A107-B12;	A107-B13;	A107-B14;
A107-B15;	A107-B16;	A107-B17;	A107-B18;	A107-B19;	A107-B20;
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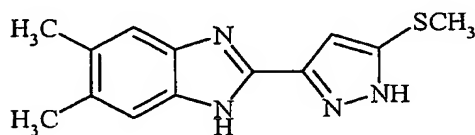
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A107-B51;	A107-B52;	A107-B53;	A107-B54;	A107-B55;	A107-B56;
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A107-B69;	A107-B70;	A107-B71;	A107-B72;	A107-B73;	A107-B74;
A107-B75;	A107-B76;	A107-B77;	A107-B78;	A107-B79;	A107-B80;
A107-B81;	A107-B82;	A107-B83;	A107-B84;	A107-B85;	A107-B86;
A107-B87;	A107-B88;	A107-B89;	A107-B90;	A107-B91;	A107-B92;
A107-B93;	A107-B94;	A107-B95;	A107-B96;	A107-B97;	A107-B98;
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A108-B14;	A108-B15;	A108-B16;	A108-B17;	A108-B18;	A108-B19;
A108-B20;	A108-B21;	A108-B22;	A108-B23;	A108-B24;	A108-B25;
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A108-B68;	A108-B69;	A108-B70;	A108-B71;	A108-B72;	A108-B73;
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A108-B80;	A108-B81;	A108-B82;	A108-B83;	A108-B84;	A108-B85;
A108-B86;	A108-B87;	A108-B88;	A108-B89;	A108-B90;	A108-B91;
A108-B92;	A108-B93;	A108-B94;	A108-B95;	A108-B96;	A108-B97;
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A108-B104;	A108-B105;	A108-B106;	A108-B107;	A108-B108;	A108-B109;
A108-B110;	A108-B111;	A108-B112;	A108-B113;	A108-B114;	A108-B115;
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A109-B13;	A109-B14;	A109-B15;	A109-B16;	A109-B17;	A109-B18;
A109-B19;	A109-B20;	A109-B21;	A109-B22;	A109-B23;	A109-B24;
A109-B25;	A109-B26;	A109-B27;	A109-B28;	A109-B29;	A109-B30;
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A109-B43;	A109-B44;	A109-B45;	A109-B46;	A109-B47;	A109-B48;
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A109-B61;	A109-B62;	A109-B63;	A109-B64;	A109-B65;	A109-B66;
A109-B67;	A109-B68;	A109-B69;	A109-B70;	A109-B71;	A109-B72;
A109-B73;	A109-B74;	A109-B75;	A109-B76;	A109-B77;	A109-B78;
A109-B79;	A109-B80;	A109-B81;	A109-B82;	A109-B83;	A109-B84;
A109-B85;	A109-B86;	A109-B87;	A109-B88;	A109-B89;	A109-B90;
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A109-B97;	A109-B98;	A109-B99;	A109-B100;	A109-B101;	A109-B102;
A109-B103;	A109-B104;	A109-B105;	A109-B106;	A109-B107;	A109-B108;

A109-B109;	A109-B110;	A109-B111;	A109-B112;	A109-B113;	A109-B114;
A109-B115;	A109-B116;	A109-B117;	A109-B118;	A109-B119;	A109-B120;
A109-B121;	A109-B122;	A109-B123;	A109-B124;	A109-B125;	A109-B126;
A109-B127;	A109-B128;	A109-B129;	A109-B130;	A109-B131;	A109-B132;
A109-B133;	A109-B134;	A109-B135;	A109-B136;	A109-B137;	A109-B138;
A109-B139;	A109-B140;	A109-B141;	A109-B142;	A109-B143;	A109-B144;
A109-B145;	A109-B146;	A109-B147;	A109-B148;	A109-B149;	A109-B150;
A109-B151;	A109-B152;	A109-B153;	A109-B154;	A109-B155;	A109-B156;
A109-B157;	A109-B158;	A109-B159;	A109-B160;	A109-B161;	A109-B162;
A109-B163;	A109-B164;	A109-B165;	A109-B166;	A109-B167;	A109-B168;
A109-B169;	A110-B1;	A110-B2;	A110-B3;	A110-B4;	A110-B5;
A110-B6;	A110-B7;	A110-B8;	A110-B9;	A110-B10;	A110-B11;
A110-B12;	A110-B13;	A110-B14;	A110-B15;	A110-B16;	A110-B17;
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A110-B54;	A110-B55;	A110-B56;	A110-B57;	A110-B58;	A110-B59;
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A110-B66;	A110-B67;	A110-B68;	A110-B69;	A110-B70;	A110-B71;
A110-B72;	A110-B73;	A110-B74;	A110-B75;	A110-B76;	A110-B77;
A110-B78;	A110-B79;	A110-B80;	A110-B81;	A110-B82;	A110-B83;
A110-B84;	A110-B85;	A110-B86;	A110-B87;	A110-B88;	A110-B89;
A110-B90;	A110-B91;	A110-B92;	A110-B93;	A110-B94;	A110-B95;
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A110-B102;	A110-B103;	A110-B104;	A110-B105;	A110-B106;	A110-B107;
A110-B108;	A110-B109;	A110-B110;	A110-B111;	A110-B112;	A110-B113;
A110-B114;	A110-B115;	A110-B116;	A110-B117;	A110-B118;	A110-B119;
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A110-B138;	A110-B139;	A110-B140;	A110-B141;	A110-B142;	A110-B143;
A110-B144;	A110-B145;	A110-B146;	A110-B147;	A110-B148;	A110-B149;

A110-B150;	A110-B151;	A110-B152;	A110-B153;	A110-B154;	A110-B155;
A110-B156;	A110-B157;	A110-B158;	A110-B159;	A110-B160;	A110-B161;
A110-B162;	A110-B163;	A110-B164;	A110-B165;	A110-B166;	A110-B167;
A110-B168;	A110-B169.				

Thus, for example, in the above list the compound denoted as A9-B9 is the product of the combination of group A9 in Table 1 and B9 in Table 2, namely



5

, Example 230(a) hereinafter described.

Particular compounds of the invention of formula (Ix) for the inhibition of SYK are:

- 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid benzylamide;
- 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-methylamide;
- 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-ethylamide;
- 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-isopropylamide;
- 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-phenylamide;
- 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-phenethylamide;
- 5,6-dimethyl-2-(5-methylsulfanyl-1H-pyrazol-3-yl)-1H-benzoimidazole;
- 6-chloro-5-methyl-2-(5-methylsulfanyl-1H-pyrazol-3-yl)-1H-benzoimidazole;
- 6-chloro-2-(5-ethylsulfanyl-1H-pyrazol-3-yl)-5-methyl-1H-benzoimidazole;
- 2-(5-methylsulfanyl-1H-pyrazol-3-yl)-5-trifluoromethyl-1H-benzoimidazole;
- 2-(5-cyclopropylmethylsulfanyl-1H-pyrazol-3-yl)-5,6-dimethyl-1H-benzoimidazole;
- 2-(5-ethylsulfanyl-1H-pyrazol-3-yl)-5,6-dimethyl-1H-benzoimidazole;
- 5,6-dimethyl-2-[5-(pyridin-3-ylmethylsulfanyl)-1H-pyrazol-3-yl]-1H-benzoimidazole;
- 5-fluoro-2-[5-methylsulfanyl)-1H-pyrazol-3-yl]-1H-benzoimidazole;
- 5,6-dimethyl-2-(5-phenethylsulfanyl-1H-pyrazol-3-yl)-1H-benzoimidazole;
- 4-methyl-2-(5-methylsulfanyl-1H-pyrazol-3-yl)-1H-benzoimidazole;
- 5,6-dimethyl-2-(5-benzylsulfanyl-1H-pyrazol-3-yl)-1H-benzoimidazole;
- 6-chloro-5-methyl-2-(5-morpholin-4-yl-1H-pyrazol-3-yl)-1H-benzoimidazole;
- 5,6-dimethyl-2-[5-(thiophen-2-ylmethylsulfanyl)-1H-pyrazol-3-yl]-1H-benzoimidazole;
- 2-(5-ethylsulfanyl-1H-pyrazol-3-yl)-5-methoxy-1H-benzoimidazole hydrochloride;
- 5-methyl-2-(5-methylsulfanyl-4-propyl-1H-pyrazol-3-yl)-1H-benzoimidazole;
- 2-(5-(4-methoxy-benzylsulfanyl)-4-propyl-1H-pyrazol-3-yl)-5-methyl-1H-benzoimidazole;

- 2-(5-benzylsulfanyl-4-isopropyl-1H-pyrazol-3-yl)-5-methyl-1H-benzoimidazole;  
2-(5-methylsulfanyl-4-methyl-1H-pyrazol-3-yl)-5-methoxy-1H-benzoimidazole;  
2-(5-methylsulfanyl-4-methyl-1H-pyrazol-3-yl)-5-methyl-1H-benzoimidazole;  
3-(5-chloro-1H-benzoimidazol-2-yl)-1H-pyrazol-4-ylamine;  
5 3-(5,6-dichloro-1H-benzoimidazol-2-yl)-1H-pyrazol-4-ylamine;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-ylamine;  
3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-ylamine;  
3-(6-chloro-5-methoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-ylamine;  
3-(5-methoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-ylamine;  
10 3-(5-ethoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-ylamine;  
3-(5-fluoro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-ylamine;  
3-(5-trifluoromethoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-ylamine;  
3-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-ylamine;  
2-(4-amino-1H-pyrazol-3-yl)-1H-benzoimidazole-5-carboxylic acid methyl ester;  
15 3-(1H-benzoimidazol-2-yl)-1H-indazole;  
3-(5-methoxy-1H-benzoimidazol-2-yl)-1H-indazole;  
[2-(indazol-3-yl)-1H-benzoimidazol-5-yl]-phenyl-methanone;  
2-(1H-indazol-3-yl)-3H-benzoimidazol-4-ol;  
2-phenyl-1H-imidazol[4,5-b]pyrazine;  
20 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-indazole;  
2-(1H-indazol-3-yl)-3H-imidazo[4,5-c]pyridine;  
2-(1H-indazole-3-yl)-3H-imidazo[4,5-b]pyridine;  
2-(1H-pyrazol-3-yl)-1H-benzoimidazole;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-5-methoxy-1H-indazole;  
25 3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-5-methoxy-1H-indazole;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-5-fluoro-1H-indazole;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-6-fluoro-1H-indazole;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-5-methyl-1H-indazole;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-6-methoxy-1H-indazole;  
30 5,6-dimethyl-2-(4-phenyl-1H-pyrazol-3-yl)-1H-benzoimidazole;  
3-(5-ethyl-1H-benzoimidazol-2-yl)-1H-indazole;  
3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-indazole;  
3-(5-isopropyl-6-methyl-1H-benzoimidazol-2-yl)-1H-indazole;  
3-(5-bromo-6-methyl-1H-benzoimidazol-2-yl)-1H-indazole;  
35 3-(5-bromo-1H-benzoimidazol-2-yl)-1H-indazole;  
3-(5-(3-cyano)phenyl-1H-benzoimidazol-2-yl)-1H-indazole;



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- 3-(5-(pyrid-3-yl)-1H-benzoimidazol-2-yl)-1H-indazole;  
3-(6-methyl-5-phenyl-1H-benzoimidazol-2-yl)-1H-indazole;  
3-(5-phenyl-1H-benzoimidazol-2-yl)-1H-indazole;  
3-(5-(2-fluoro)phenyl-1H-benzoimidazol-2-yl)-1H-indazole;  
5 3-(5-(5,6-methylenedioxy)phenyl-1H-benzoimidazol-2-yl)-1H-indazole;  
3-(5-(2-methoxy)phenyl-1H-benzoimidazol-2-yl)-1H-indazole;  
3-(5-(4-chloro)phenyl-1H-benzoimidazol-2-yl)-1H-indazole;  
3-(5-(4-methyl)phenyl-1H-benzoimidazol-2-yl)-1H-indazole;  
3-(5-benzyloxy-1H-benzoimidazol-2-yl)-1H-indazole;  
10 3-(5,6-methylenedioxy-1H-benzoimidazol-2-yl)-1H-indazole;  
3-(5,6-dimethoxy-1H-benzoimidazol-2-yl)-1H-indazole;  
3-(5,6-diethyl-1H-benzoimidazol-2-yl)-1H-indazole;  
3-(4,5-dimethyl-1H-benzoimidazol-2-yl)-1H-indazole;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carbonitrile;  
15 3-(5-methoxycarbonyl-1H-benzoimidazol-2-yl)-1H-indazole;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-5-ethoxy-1H-indazole;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-pyrazole-4-carboxylic acid ethyl ester;  
2-(4-isopropylcarbamoyl-1H-pyrazol-3-yl)-1H-benzoimidazole-5-carboxylic acid methyl ester;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-5-methyl-pyrazole-4-carboxylic acid ethyl ester;  
20 3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1H-pyrazole-4-carboxylic acid cyclopropylamide;  
3-(5-methoxy-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isopropylamide;  
3-[5-(2-morpholin-4-yl-ethoxy)-1H-benzoimidazol-2-yl]-1H-indazole;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid (2-methoxy-ethyl)-amide;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid propylamide;  
25 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid (tetrahydro-pyran-4-yl)-amide;  
3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-indazole-5-carbonitrile;  
3-(5-difluoromethoxy-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isopropylamide;  
3-(5-difluoromethoxy-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid cyclopropylamide;  
3-(6-ethyl-5-methoxy-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isopropylamide;  
30 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-indazole-5-carbonitrile;  
2-(5-methyl-1H-pyrazol-3-yl)-1H-benzoimidazole;  
2-(5-ethoxy-1H-pyrazol-3-yl)-1H-benzoimidazole;  
2-(5-methylsulfanyl-isoxazol-3-yl)-1H-benzoimidazole;  
5-chloro-2-(4-nitro-1H-pyrazol-3-yl)-1H-benzoimidazole;  
35 5,6-dichloro-2-(4-nitro-1H-pyrazol-3-yl)-1H-benzoimidazole;  
(benzoimidazol-2-yl)-5-methylthio-3-pyrazole;

- 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-4,5,6,7-tetrahydro-1H-indazole;  
2-(5-isopropyl-1H-pyrazol-3-yl)-5,6-dimethyl-1H-benzoimidazole;  
2-(5-ethyl-1H-pyrazol-3-yl)-5,6-dimethyl-1H-benzoimidazole;  
5,6-dimethyl-2-(1,4,5,6-tetrahydro-cyclopentapyrazol-3-yl)-1H-benzoimidazole;  
5 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-4-fluoro-1H-indazole;  
4-chloro-3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-indazole;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-5-chloro-1H-indazole;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-indazol-5-ol;  
3-(5-n-propyl-1H-benzoimidazol-2-yl)-1H-indazole;  
10 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-sulfonic acid benzylamide;  
3-(5-methanesulfonyl-1H-benzoimidazol-2-yl)-1H-indazole;  
[2-(indazol-3-yl)-1H-benzoimidazol-5-yl]-phenyl-methanol;  
[2-(indazol-3-yl)-1H-benzoimidazol-5-yl]-carboxylic acid;  
[2-(indazol-3-yl)-1H-benzoimidazol-5-yl]-carboxylic acid, methylamide;  
15 [2-(indazol-3-yl)-1H-benzoimidazol-5-yl]-carboxylic acid, dimethylamide;  
[2-(indazol-3-yl)-1H-benzoimidazol-5-yl]-carboxylic acid, isopropylamide;  
1H-benzoimidazol-5-yl]-carboxylic acid, benzylamide;  
[2-(indazol-3-yl)-1H-benzoimidazol-5-yl]-carboxylic acid, benzamide;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isopropylamide;  
20 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid (2-hydroxy-1,1-dimethyl-ethyl)-amide;  
2-(4-isopropylcarbamoyl-1H-pyrazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (pyridin-3-ylmethyl)-amide;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-5-methyl-1H-pyrazole-4-carboxylic acid cyclopropylamide;  
25 2-(4-isopropylcarbamoyl-1H-pyrazol-3-yl)-1H-benzoimidazole-5-carboxylic acid phenylmethyl-amide;  
2-(4-isopropylcarbamoyl-1H-pyrazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (pyridin-2-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (pyridin-3-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 3-methyl-benzylamide;  
30 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-methyl-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid [3-(2-oxo-pyrrolidin-1-yl)-propyl]-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2-morpholin-4-yl-ethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2-methoxy-ethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2-cyano-ethyl)-amide;  
35 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2-hydroxy-1,1-dimethyl-ethyl)-amide;  
2-(1H-Indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (3-imidazol-1-yl-propyl)-amide;

- 3-(5, 6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isobutyl-amide;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isopropylamide;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid cyclopropylmethyl-amide;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-5-methyl-1H-pyrazole-4-carboxylic acid tert-butylamide;  
5 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-indazole-5-carboxylic acid dimethylamide;  
2-(4-isobutyrylamino-1H-pyrazol-3-yl)-1H-benzoimidazole-5-carboxylic acid benzylamide;  
[2-(indazol-3-yl)-1H-benzoimidazol-5-yl]-carboxylic acid;  
3-(5,6-dimethyl-1H-benzoimidazol-5-yl)-pyrazole-4-carboxylic acid;  
2-(4-isopropylcarbamoyl-1H-pyrazol-3-yl)-1H-benzoimidazole-5-carboxylic acid;  
10 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-5-methyl-pyrazole-4-carboxylic acid;  
N-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-isobutyramide ;  
N-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-methyl-butyramide;  
N-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-2-phenyl-acetamide;  
cyclopropanecarboxylic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
15 methoxyacetic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
cyclopentanecarboxylic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
trimethylacetic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
tert-butylacetic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
butanoic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
20 isoxazole-5-carboxylic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
S(+)-2-methylbutanoic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
cyclopropanecarboxylic acid [3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
piperidine-1-carboxylic acid [3-(6-chloro-5-methoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
3-[3-(6-chloro-5-methoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-dimethylurea;  
25 cyclopropanecarboxylic acid [3-(5-methoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
cyclopropanecarboxylic acid [3-(5-ethoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
cyclopropanecarboxylic acid [3-(5-fluoro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
cyclopropanecarboxylic acid [3-(5-trifluoromethoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
cyclopropanecarboxylic acid [3-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
30 N-[3-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-isobutyramide;  
cyclopropanecarboxylic acid [3-(5-chloro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
3,5-dimethyl-isoxazole-4-carboxylic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
N-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-acetamide;  
35 furan-3-carboxylic acid [3-(5-chloro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
N-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-4-methyl-benzamide;

- 5,6-dimethyl-2-(4-nitro-1H-pyrazol-3-yl)-1H-benzoimidazole;  
5-ethyl-6-methyl-2-(4-nitro-1H-pyrazol-3-yl)-1H-benzoimidazole;  
6-chloro-5-methoxy-2-(4-nitro-1H-pyrazol-3-yl)-1H-benzoimidazole;  
5-fluoro-6-methyl-2-(4-nitro-1H-pyrazol-3-yl)-1H-benzoimidazole;  
5 2-(4-nitro-1H-pyrazol-3-yl)-5-trifluoromethoxy-1H-benzoimidazole;  
2-(4-nitro-1H-pyrazol-3-yl)-5-trifluoromethyl-1H-benzoimidazole;  
5-chloro-6-methyl-2-(4-nitro-1H-pyrazol-3-yl)-1H-benzoimidazole;  
2-(4-nitro-1H-pyrazol-3-yl)-1H-benzoimidazole-5-carboxylic acid methyl ester;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid  
10 isopropylamide;  
cyclopropyl-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-  
methanone;  
isopropyl-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-  
methanone;  
15 1-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-2,2-  
dimethyl-propan-1-one;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid  
methyl ester;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-4,5,6,7-tetrahydro-1H-pyrazolo[4,3-c]pyridine;  
20 3-(5-chloro-6-methyl-1H-benzoimidazol-2-yl)-4,5,6,7-tetrahydro-1H-pyrazolo[4,3-c]pyridine;  
3-[5-(2-morpholin-4-yl-ethoxy)-1H-benzoimidazol-2-yl]-4,5,6,7-tetrahydro-1H-  
pyrazolo[4,3-c]pyridine;  
3-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-4,5,6,7-tetrahydro-1H-pyrazolo[4,3-c]pyridine;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid  
25 *tert*-butyl ester;  
5-methoxy-2-(4-nitro-1H-pyrazol-3-yl)-1H-benzoimidazole;  
5-ethoxy-2-(4-nitro-1H-pyrazol-3-yl)-1H-benzoimidazole;  
3-(5-chloro-6-methyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic  
acid *tert*-butyl ester;  
30 3-[5-(2-morpholin-4-yl-ethoxy)-1H-benzoimidazol-2-yl]-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-  
carboxylic acid *tert*-butyl ester;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrano[4,3-c]pyrazole;  
3-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic  
acid *tert*-butyl ester;  
35 N-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-2-morpholin-4-yl-acetamide;  
2-dimethylamino-N-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-acetamide;

- N-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-2-(1H-1,2,3,4-tetraazol-1-yl)-acetamide;  
N-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-isonicotinamide;  
2-cyclopropyl-N-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-acetamide;  
1-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-methyl-urea;  
5 1-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-isopropyl-urea;  
1-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-phenyl-urea;  
1-benzyl-3-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-urea;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid  
isopropylamide;  
10 cyclopropanecarboxylic acid[3-(5-ethoxy-6-ethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]amide;  
3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1H-pyrazol-4-ylamine;  
4-methylpiperazine-1-carboxylic acid [3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1H-pyrazol-4-yl]amide;  
1,1-dimethyl-3-[3-(1,5,6,7-tetrahydro-s-indacen-2-yl)-1H-pyrazol-4-yl]urea;  
15 cyclopropanecarboxylic acid [3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]amide;  
tetrahydropyran-4-carboxylic acid [3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]amide;  
morpholine-4-carboxylic acid[3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]amide;  
piperidine-4-carboxylic acid[3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]amide;  
20 3-[6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-diethylurea;  
5-methoxy-2-(4-nitro-1H-pyrazol-3-yl)-1H-benzoimidazole;  
morpholine-4-carboxylic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-ylmethyl]-amide;  
3-[3-(5-difluoromethoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-diethyl-urea;  
25 piperidine-1-carboxylic acid [3-(5-difluoromethoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
cyclopropanecarboxylic acid [3-(6-chloro-5-methoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
cyclopropanecarboxylic acid [3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1H-pyrazol-4-yl]amide;  
morpholine-4-carboxylic acid[3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1H-pyrazol-4-yl]-amide;  
piperidine-1-carboxylic acid [3-(5-methoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
30 3-[3-(5-methoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-dimethyl-urea;  
piperidine-1-carboxylic acid [3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
3-[3-(5-fluoro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-dimethyl-urea;  
morpholine-4-carboxylic acid [3-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid  
35 diethylamide;

- [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-pyrrolidin-1-yl-methanone;  
[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-piperidin-1-yl-methanone;  
5 [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-morpholin-4-yl-methanone;  
3-(5-chloro-6-methyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid diethylamide;  
morpholine-4-carboxylic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
10 piperidine-1-carboxylic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
3-[5-(2-morpholin-4-yl-ethoxy)-1H-benzoimidazol-2-yl]-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid diethylamide;  
3-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid diethylamide;  
15 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid [2-(2H-tetrazol-5-yl)-ethyl]-amide;  
1-cyclopropyl-3-[3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-urea;  
1-[3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-methyl-urea;  
4-methyl-piperazine-1-carboxylic acid [3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
20 piperidine-1-carboxylic acid [3-(5-fluoro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
1-[3-(5-fluoro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-methyl-urea;  
morpholine-4-carboxylic acid [3-(5-fluoro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
4-methyl-piperazine-1-carboxylic acid [3-(5-fluoro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
25 1-methyl-3-[3-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-urea;  
1-[3-(5-chloro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-methyl-urea;  
4-methyl-piperazine-1-carboxylic acid [3-(5-chloro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
1-tert-butyl-3-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-urea;  
30 1-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-ethyl-urea;  
4-methyl-piperazine-1-carboxylic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
1-cyclopropyl-3-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-urea;  
3-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-diethyl-urea;  
35 1-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-isobutyl-urea;  
1-cyclopropylmethyl-3-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-urea;

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- 3-(5-chloro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-ylamine;  
 3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-indazole-5-carboxylic acid amide dihydrochloride;  
 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-indazole-5-carboxylic acid;  
 2-(4-isobutyrylamino-1H-pyrazol-3-yl)-1H-benzoimidazole-5-carboxylic acid;  
 5 3-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-dimethyl-urea;  
 3-(5-nitro-1H-benzoimidazol-2-yl)-1H-indazole;  
 2-(1H-Indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2-piperidin-1-yl-ethyl)-amide;  
 2-(1H-Indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (pyridin-2-ylmethyl)-amide;  
 2-(1H-Indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid [3-(4-methyl-piperazin-1-yl)-propyl]-amide;  
 10 N-[2-(1H-Indazol-3-yl)-1H-benzoimidazol-5-yl]-isobutyramide;  
 N-[3-(5,6-Dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-2-piperidin-1-yl-acetamide;  
 2-(1H-indazol-3-yl)-3H-benzoimidazol-5-amine;  
 piperidine-1-carboxylic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
 and the corresponding N-oxides, and their prodrugs; and pharmaceutically acceptable salts and solvates  
 15 (e.g. hydrates) of such compounds and their N-oxides and prodrugs.

Preferred compounds of formula (Ixa) of the invention for the inhibition of SYK are:-

- 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid benzylamide;  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-methylamide;  
 20 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-ethylamide;  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-isopropylamide;  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-phenylamide;  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-phenethylamide;  
 5,6-dimethyl-2-(5-methylsulfanyl-1H-pyrazol-3-yl)-1H-benzoimidazole;  
 25 6-chloro-5-methyl-2-(5-methylsulfanyl-1H-pyrazol-3-yl)-1H-benzoimidazole;  
 6-chloro-2-(5-ethylsulfanyl-1H-pyrazol-3-yl)-5-methyl-1H-benzoimidazole;  
 2-(5-methylsulfanyl-1H-pyrazol-3-yl)-5-trifluoromethyl-1H-benzoimidazole;  
 2-(5-cyclopropylmethylsulfanyl-1H-pyrazol-3-yl)-5,6-dimethyl-1H-benzoimidazole;  
 2-(5-ethylsulfanyl-1H-pyrazol-3-yl)-5,6-dimethyl-1H-benzoimidazole;  
 30 5,6-dimethyl-2-[5-(pyridin-3-ylmethylsulfanyl)-1H-pyrazol-3-yl]-1H-benzoimidazole;  
 5-fluoro-2-[5-methylsulfanyl)-1H-pyrazol-3-yl]-1H-benzoimidazole;  
 5,6-dimethyl-2-(5-phenethylsulfanyl-1H-pyrazol-3-yl)-1H-benzoimidazole;  
 4-methyl-2-(5-methylsulfanyl-1H-pyrazol-3-yl)-1H-benzoimidazole;  
 5,6-dimethyl-2-(5-benzylsulfanyl-1H-pyrazol-3-yl)-1H-benzoimidazole;  
 35 5,6-dimethyl-2-[5-(thiophen-2-ylmethylsulfanyl)-1H-pyrazol-3-yl]-1H-benzoimidazole;  
 2-(5-ethylsulfanyl-1H-pyrazol-3-yl)-5-methoxy-1H-benzoimidazole hydrochloride;

- 5-methyl-2-(5-methylsulfanyl-4-propyl-1H-pyrazol-3-yl)-1H-benzimidazole;  
2-(5-(4-methoxy-benzylsulfanyl)-4-propyl-1H-pyrazol-3-yl)-5-methyl-1H-benzimidazole;  
2-(5-benzylsulfanyl-4-isopropyl-1H-pyrazol-3-yl)-5-methyl-1H-benzimidazole;  
2-(5-methylsulfanyl-4-methyl-1H-pyrazol-3-yl)-5-methoxy-1H-benzimidazole;  
5 2-(5-methylsulfanyl-4-methyl-1H-pyrazol-3-yl)-5-methyl-1H-benzimidazole;  
3-(5-chloro-1H-benzimidazol-2-yl)-1H-pyrazol-4-ylamine;  
3-(5,6-dichloro-1H-benzimidazol-2-yl)-1H-pyrazol-4-ylamine;  
5,6-dimethyl-2-(4-phenyl-1H-pyrazol-3-yl)-1H-benzimidazole;  
3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1H-pyrazole-4-carboxylic acid cyclopropylamide;  
10 3-(5-methoxy-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isopropylamide;  
3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid (2-methoxy-ethyl)-amide;  
3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid propylamide;  
3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid (tetrahydro-pyran-4-yl)-amide;  
3-(5-difluoromethoxy-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isopropylamide;  
15 3-(5-difluoromethoxy-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid cyclopropylamide;  
3-(6-ethyl-5-methoxy-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isopropylamide;  
2-(5-ethoxy-1H-pyrazol-3-yl)-1H-benzimidazole;  
(benzimidazol-2-yl)-5-methylthio-3-pyrazole;  
2-(5-isopropyl-1H-pyrazol-3-yl)-5,6-dimethyl-1H-benzimidazole;  
20 2-(5-ethyl-1H-pyrazol-3-yl)-5,6-dimethyl-1H-benzimidazole;  
3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isopropylamide;  
3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid (2-hydroxy-1,1-dimethyl-ethyl)-amide;  
2-(4-isopropylcarbamoyl-1H-pyrazol-3-yl)-1H-benzimidazole-5-carboxylic acid (pyridin-3-ylmethyl)-  
25 amide;  
3-(5,6-dimethyl-1H-benzimidazol-2-yl)-5-methyl-1H-pyrazole-4-carboxylic acid cyclopropylamide;  
2-(4-isopropylcarbamoyl-1H-pyrazol-3-yl)-1H-benzimidazole-5-carboxylic acid phenylmethyl-amide;  
3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isobutyl-amide;  
3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isopropylamide;  
30 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid cyclopropylmethyl-amide;  
3-(5,6-dimethyl-1H-benzimidazol-2-yl)-5-methyl-1H-pyrazole-4-carboxylic acid tert-butylamide;  
2-(4-isobutyrylamino-1H-pyrazol-3-yl)-1H-benzimidazole-5-carboxylic acid benzylamide;  
N-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-isobutyramide;  
N-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-3-methyl-butyramide;  
35 N-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-2-phenyl-acetamide;  
cyclopropanecarboxylic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;



- methoxyacetic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
cyclopentanecarboxylic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
trimethylacetic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
*tert*-butylacetic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;
- 5 butanoic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
isoxazole-5-carboxylic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
S(+)-2-methylbutanoic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
cyclopropanecarboxylic acid [3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
piperidine-1-carboxylic acid [3-(6-chloro-5-methoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;
- 10 3-[3-(6-chloro-5-methoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-dimethylurea;  
cyclopropanecarboxylic acid [3-(5-methoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
cyclopropanecarboxylic acid [3-(5-ethoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
cyclopropanecarboxylic acid [3-(5-fluoro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
cyclopropanecarboxylic acid [3-(5-trifluoromethoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;
- 15 cyclopropanecarboxylic acid [3-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
N-[3-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-isobutyramide;  
cyclopropanecarboxylic acid [3-(5-chloro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
3,5-dimethyl-isoxazole-4-carboxylic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;
- 20 N-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-acetamide;  
furan-3-carboxylic acid [3-(5-chloro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
N-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-4-methyl-benzamide;  
N-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-2-morpholin-4-yl-acetamide;  
2-dimethylamino-N-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-acetamide;
- 25 N-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-2-(1H-1,2,3,4-tetraazol-1-yl)-acetamide;  
N-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-isonicotinamide;  
2-cyclopropyl-N-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-acetamide;  
1-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-methyl-urea;  
1-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-isopropyl-urea;
- 30 1-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-phenyl-urea;  
1-benzyl-3-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-urea;  
cyclopropanecarboxylic acid [3-(5-ethoxy-6-ethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]amide;  
4-methylpiperazine-1-carboxylic acid [3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1H-pyrazol-4-yl]amide;
- 35 1,1-dimethyl-3-[3-(1,5,6,7-tetrahydro-s-indacen-2-yl)-1H-pyrazol-4-yl]urea;  
cyclopropanecarboxylic acid [3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]amide;

- tetrahydropyran-4-carboxylic acid [3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]amide;  
morpholine-4-carboxylic acid[3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]amide;  
piperidine-4-carboxylic acid[3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]amide;  
5 3-[6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-diethylurea;  
morpholine-4-carboxylic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-ylmethyl]-amide;  
3-[3-(5-difluoromethoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-diethyl-urea;  
piperidine-1-carboxylic acid [3-(5-difluoromethoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
10 cyclopropanecarboxylic acid [3-(6-chloro-5-methoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
cyclopropanecarboxylic acid [3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1H-pyrazol-4-yl]amide;  
morpholine-4-carboxylic acid[3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1H-pyrazol-4-yl]-amide;  
piperidine-1-carboxylic acid [3-(5-methoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
3-[3-(5-methoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-dimethyl-urea;  
15 piperidine-1-carboxylic acid [3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
3-[3-(5-fluoro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-dimethyl-urea;  
morpholine-4-carboxylic acid [3-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
morpholine-4-carboxylic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
piperidine-1-carboxylic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
20 1-cyclopropyl-3-[3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-urea;  
1-[3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-methyl-urea;  
4-methyl-piperazine-1-carboxylic acid [3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
piperidine-1-carboxylic acid [3-(5-fluoro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
25 1-[3-(5-fluoro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-methyl-urea;  
morpholine-4-carboxylic acid [3-(5-fluoro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
4-methyl-piperazine-1-carboxylic acid [3-(5-fluoro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
1-methyl-3-[3-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-urea;  
30 1-[3-(5-chloro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-methyl-urea;  
4-methyl-piperazine-1-carboxylic acid [3-(5-chloro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
1-tert-butyl-3-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-urea;  
1-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-ethyl-urea;  
35 4-methyl-piperazine-1-carboxylic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;

- 1-cyclopropyl-3-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-urea;  
 3-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-diethyl-urea;  
 1-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-3-isobutyl-urea;  
 1-cyclopropylmethyl-3-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-urea;  
 5 3-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-dimethyl-urea;  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid (2-piperidin-1-yl-ethyl)-amide;  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid (pyridin-2-ylmethyl)-amide;  
 N-[2-(1H-indazol-3-yl)-1H-benzimidazole-5-yl]-isobutyramide;  
 N-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-2-piperidin-1-yl-acetamide;  
 10 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-morpholinoamide;  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-(N'-methylpiperazino)amide;  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-pyrrolidinoamide;  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-(isobutyl)amide;  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-(cyclohexylmethyl)amide;  
 15 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-(2-furfuryl)amide;  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-benzyl-N-methylamide;  
 methyl 2-(1H-indazol-3-yl)-3H-benzimidazole-5-carboxylate;  
 5,6-dimethyl-2-(1H-indazol-3-yl)-1H-benzimidazole;  
 2-(1H-indazol-3-yl)-3H-benzimidazole-4-carboxylic acid;  
 20 2-(5-ethoxy-2H-pyrazol-3-yl)-1H-benzimidazole-4-carboxylic acid;  
 5,6-dimethyl-2-(5-methyl-2H-pyrazol-3-yl)-1H-benzimidazole;  
 5,6-dimethyl-2-(5-thiophen-2-yl-2H-pyrazol-3-yl)-1H-benzimidazole;  
 2-(4-bromo-2H-pyrazol-3-yl)-5,6-dimethyl-1H-benzimidazole;  
 2-(5-ethyl-2H-pyrazol-3-yl)-5,6-dimethyl-1H-benzimidazole;  
 25 2-(5-ethyl-2H-pyrazol-3-yl)-4,5-ethylenedioxy-1H-benzimidazole;  
 2-(5-ethyl-2H-pyrazol-3-yl)-5-methoxy-1H-benzimidazole;  
 2-(5-ethyl-2H-pyrazol-3-yl)-4-hydroxy-1H-benzimidazole;  
 2-(5-ethyl-2H-pyrazol-3-yl)-5-bromo-1H-benzimidazole;  
 and the corresponding N-oxides, and their prodrugs; and pharmaceutically acceptable salts and solvates  
 30 (e.g. hydrates) of such compounds and their N-oxides and prodrugs.

Particularly preferred compounds of formula (Ixa) of the invention for the inhibition of SYK are:-

- 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid benzylamide, Example 1;  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-methylamide, Example 2;  
 35 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-ethylamide, Example 3;  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-isopropylamide, Example 4;

- 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-phenylamide, Example 5;  
2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-phenethylamide, Example 6  
5,6-dimethyl-2-(5-methylsulfanyl-1H-pyrazol-3-yl)-1H-benzoimidazole, (compound denoted as A9-B9), Example 230(a);
- 5 6-chloro-2-(5-methylsulfanyl-1H-pyrazol-3-yl)-5-methyl-1H-benzoimidazole, (compound denoted as A12-B9), Example 230(b);  
6-chloro-2-(5-ethylsulfanyl-1H-pyrazol-3-yl)-5-methyl-1H-benzoimidazole, (compound denoted as A12-B10), Example 230(c);  
2-(5-methylsulfanyl-1H-pyrazol-3-yl)-5-trifluoromethyl-1H-benzoimidazole, (compound denoted as A4-B9), Example 230(d);
- 10 2-(5-cyclopropylmethylsulfanyl-1H-pyrazol-3-yl)-5,6-dimethyl-1H-benzoimidazole, (compound denoted as A9-B11), Example 230(e);  
2-(5-ethylsulfanyl-1H-pyrazol-3-yl)-5,6-dimethyl-1H-benzoimidazole, (compound denoted as A9-B10), Example 230(f);
- 15 3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1H-pyrazole-4-carboxylic acid cyclopropylamide, Example 235(ah);  
3-(5-methoxy-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isopropylamide, Example 235(ai);  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid (2-methoxy-ethyl)-amide,
- 20 Example 235(ak);  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid propylamide, Example 235(al);  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid (tetrahydro-pyran-4-yl)-amide, Example 235(am);
- 25 3-(5-difluoromethoxy-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isopropylamide, Example 235(ao);  
3-(5-difluoromethoxy-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid cyclopropylamide, Example 235(ap);  
3-(6-ethyl-5-methoxy-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isopropylamide,
- 30 Example 235(aq);  
2-(5-isopropyl-1H-pyrazol-3-yl)-5,6-dimethyl-1H-benzoimidazole, (compound denoted as A9-B83), Example 241(b);  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isopropylamide, (compound denoted as A9-B106), Example 246(g);
- 35 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid (2-hydroxy-1,1-dimethyl-ethyl)-amide, (compound denoted as A9-B25), Example 246(h);

- 2-(4-isopropylcarbamoyl-1H-pyrazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (pyridin-3-ylmethyl)-amide, (compound denoted as A40-B106), Example 246(i);
- 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-5-methyl-1H-pyrazole-4-carboxylic acid cyclopropylamide, (compound denoted as A9-B105), Example 246(j);
- 5 2-(4-isopropylcarbamoyl-1H-pyrazol-3-yl)-1H-benzoimidazole-5-carboxylic acid phenylmethyl-amide, (compound denoted as A17-B106), Example 246(k);
- 3-(5, 6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isobutyl-amide, Example 246(v);
- 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isopropylamide, Example
- 10 246(w);
- 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid cyclopropylmethyl-amide, Example 246(x);
- 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-5-methyl-1H-pyrazole-4-carboxylic acid tert-butylamide, Example 246(y);
- 15 2-(4-isobutyrylamino-1H-pyrazol-3-yl)-1H-benzoimidazole-5-carboxylic acid benzylamide, Example 246(aa);
- N-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-isobutyramide, (compound denoted as A9-B85), Example 248(a);
- N-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-methyl-butyramide, (compound
- 20 denoted as A9-B86), Example 248(b);
- N-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-2-phenyl-acetamide, (compound denoted as A9-B36), Example 248(c);
- cyclopropanecarboxylic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide, (compound denoted as A9-B89), Example 248(d);
- 25 methoxyacetic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide, (compound denoted as A9-B94), Example 248(e);
- cyclopentanecarboxylic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide, (compound denoted as A9-B87), Example 248(f);
- trimethylacetic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide, (compound
- 30 denoted as A9-B88), Example 248(g);
- tert*-butylacetic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide, (compound denoted as A9-B90), Example 248(h);
- butanoic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide, (compound denoted as A9-B91), Example 248(i);
- 35 isoxazole-5-carboxylic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide, (compound denoted as A9-B96), Example 248(j);

- S(+)-2-methylbutanoic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide, (compound denoted as A9-B93), Example 248(k);  
cyclopropanecarboxylic acid [3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide, (compound denoted as A55-B89), Example 248(l);
- 5 piperidine-1-carboxylic acid[3-(6-chloro-5-methoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide, Example 248(m);  
3-[3-(6-chloro-5-methoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-dimethylurea, Example 248(n);  
cyclopropanecarboxylic acid [3-(5-methoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide, Example
- 10 248(o);  
cyclopropanecarboxylic acid [3-(5-ethoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide, Example 248(p);  
cyclopropanecarboxylic acid [3-(5-fluoro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide, Example 248(q);
- 15 cyclopropanecarboxylic acid [3-(5-trifluoromethoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide, Example 248(r);  
cyclopropanecarboxylic acid [3-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide, Example 248(s);  
N-[3-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-isobutyramide, Example 248(t);
- 20 cyclopropanecarboxylic acid [3-(5-chloro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide, Example 248(u);  
3,5-dimethyl-isoxazole-4-carboxylic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide, Example 248(v);  
N-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-acetamide, Example 248(w);
- 25 furan-3-carboxylic acid [3-(5-chloro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide, Example 248(x);  
N-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-4-methyl-benzamide, Example 248(y);  
N-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-2-morpholin-4-yl-acetamide, (compound denoted as A9-B99), Example 253;
- 30 N-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]- 2-(1H-1,2,3,4-tetraazol-1-yl)-acetamide, (compound denoted as A9-B97), Example 254(a);  
N-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-isonicotinamide; Example 254(b);  
2-cyclopropyl-N-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-acetamide; Example 254(c);
- 35 1-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-methyl-urea, (compound denoted as A9-B38), Example 255(a);

- 1-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-3-isopropyl-urea, (compound denoted as A9-B103), Example 255(b);
- 1-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-3-phenyl-urea, (compound denoted as A9-B40), Example 255(c);
- 5 1-benzyl-3-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-urea, (compound denoted as A9-B39), Example 255(d);
- cyclopropanecarboxylic acid[3-(5-ethoxy-6-ethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]amide, Example 256(a);
- 4-methylpiperazine-1-carboxylic acid [3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1H-pyrazol-4-yl]amide, Example 256(c);
- 10 1,1-dimethyl-3-[3-(1,5,6,7-tetrahydro-s-indacen-2-yl)-1H-pyrazol-4-yl]urea, Example 256(d);
- cyclopropanecarboxylic acid [3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]amide, Example 257(a);
- tetrahydropyran-4-carboxylic acid [3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1H-pyrazole-4-yl]amide, Example 257(b);
- 15 morpholine-4-carboxylic acid[3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]amide, Example 257(c);
- piperidine-4-carboxylic acid[3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]amide, Example 257(d);
- 20 3-[6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-diethylurea, Example 257(e);
- morpholine-4-carboxylic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-ylmethyl]-amide, Example 257(g);
- 3-[3-(5-difluoromethoxy-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-diethyl-urea, Example 257(h);
- piperidine-1-carboxylic acid [3-(5-difluoromethoxy-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide, Example 257(i);
- 25 cyclopropanecarboxylic acid [3-(6-chloro-5-methoxy-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide, Example 258(a);
- cyclopropanecarboxylic acid [3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1H-pyrazol-4-yl]amide, Example 258(b);
- 30 morpholine-4-carboxylic acid[3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1H-pyrazol-4-yl]-amide, Example 258(c);
- piperidine-1-carboxylic acid [3-(5-methoxy-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide, Example 258(d);
- 3-[3-(5-methoxy-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-dimethyl-urea, Example 258(e);
- 35 piperidine-1-carboxylic acid [3-(5-ethyl-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide, Example 258(f);

- 3-[3-(5-fluoro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-dimethyl-urea, Example 258(g);  
morpholine-4-carboxylic acid [3-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide,  
Example 258(h);  
morpholine-4-carboxylic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide,  
5 Example 258(n);  
piperidine-1-carboxylic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide,  
Example 258(o);  
1-cyclopropyl-3-[3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-urea, Example 260(a);  
1-[3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-methyl-urea, Example 260(b);  
10 4-methyl-piperazine-1-carboxylic acid [3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-  
amide, Example 260(c);  
piperidine-1-carboxylic acid [3-(5-fluoro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide,  
Example 260(d);  
1-[3-(5-fluoro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-methyl-urea, Example 260(e);  
15 morpholine-4-carboxylic acid [3-(5-fluoro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide,  
Example 260(f);  
4-methyl-piperazine-1-carboxylic acid [3-(5-fluoro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-  
yl]-amide, Example 260(g);  
1-methyl-3-[3-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-urea, Example 260(h);  
20 1-[3-(5-chloro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-methyl-urea, Example 260(i);  
4-methyl-piperazine-1-carboxylic acid [3-(5-chloro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-  
yl]-amide, Example 260(j);  
1-tert-butyl-3-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-urea, Example 260(k);  
1-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-ethyl-urea, Example 260(l);  
25 4-methyl-piperazine-1-carboxylic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-  
amide, Example 260(m);  
1-cyclopropyl-3-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-urea, Example 260(n);  
3-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-diethyl-urea, Example 260(o);  
1-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-isobutyl-urea, Example 260(p);  
30 1-cyclopropylmethyl-3-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-urea, Example  
260(q);  
3-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-dimethyl-urea, Example 258(r);  
2-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid (2-piperidin-1-yl-ethyl)-amide, Example  
246(ab);  
35 2-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid (pyridin-2-ylmethyl)-amide, Example  
246(ac);



N-[3-(5,6-Dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-2-piperidin-1-yl-acetamide, Example 253(c);

and the corresponding N-oxides, and their prodrugs; and pharmaceutically acceptable salts and solvates (e.g. hydrates) of such compounds and their N-oxides and prodrugs.

5

Especially preferred compounds of formula (Ixa), denoted as the product of the combination of group A1 in Table 1 and B1 in Table 2, of the invention for the inhibition of SYK are:-

3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1H-pyrazole-4-carboxylic acid cyclopropylamide, Example 235(ah);

10 3-(5-methoxy-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isopropylamide, Example 235(ai);

3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid (2-methoxy-ethyl)-amide, Example 235(ak);

15 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid propylamide, Example 235(al);

3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid (tetrahydro-pyran-4-yl)-amide, Example 235(am);

3-(5-difluoromethoxy-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isopropylamide, Example 235(ao);

20 3-(5-difluoromethoxy-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid cyclopropylamide, Example 235(ap);

3-(6-ethyl-5-methoxy-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isopropylamide, Example 235(aq);

25 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isopropylamide, (compound denoted as A9-B106), Example 246(g);

3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid (2-hydroxy-1,1-dimethyl-ethyl)-amide, (compound denoted as A9-B25), Example 246(h);

2-(4-isopropylcarbamoyl-1H-pyrazol-3-yl)-1H-benzimidazole-5-carboxylic acid (pyridin-3-ylmethyl)-amide, (compound denoted as A40-B106), Example 246(i);

30 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-5-methyl-1H-pyrazole-4-carboxylic acid cyclopropylamide, (compound denoted as A9-B105), Example 246(j);

2-(4-isopropylcarbamoyl-1H-pyrazol-3-yl)-1H-benzimidazole-5-carboxylic acid phenylmethyl-amide, (compound denoted as A17-B106), Example 246(k);

35 3-(5, 6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isobutyl-amide, Example 246(v);

- 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isopropylamide, Example 246(w);
- 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid cyclopropylmethyl-amide, Example 246(x);
- 5 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-5-methyl-1H-pyrazole-4-carboxylic acid tert-butylamide, Example 246(y);
- 2-(4-isobutyrylamino-1H-pyrazol-3-yl)-1H-benzimidazole-5-carboxylic acid benzylamide, Example 246(aa);
- N-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-isobutyramide, (compound denoted as
- 10 A9-B85), Example 248(a);
- N-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-3-methyl-butyramide, (compound denoted as A9-B86), Example 248(b);
- cyclopropanecarboxylic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide, (compound denoted as A9-B89), Example 248(d);
- 15 methoxyacetic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide, (compound denoted as A9-B94), Example 248(e);
- cyclopentanecarboxylic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide, (compound denoted as A9-B87), Example 248(f);
- trimethylacetic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide, (compound
- 20 denoted as A9-B88), Example 248(g);
- tert-butylacetic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide, (compound denoted as A9-B90), Example 248(h);
- butanoic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide, (compound denoted as A9-B91), Example 248(i);
- 25 isoxazole-5-carboxylic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide, (compound denoted as A9-B96), Example 248(j);
- S(+)-2-methylbutanoic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide, (compound denoted as A9-B93), Example 248(k);
- cyclopropanecarboxylic acid [3-(5-ethyl-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide,
- 30 (compound denoted as A55-B89), Example 248(l);
- piperidine-1-carboxylic acid[3-(6-chloro-5-methoxy-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide, Example 248(m);
- 3-[3-(6-chloro-5-methoxy-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-dimethylurea, Example 248(n);
- 35 cyclopropanecarboxylic acid [3-(5-methoxy-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide, Example 248(o);

- cyclopropanecarboxylic acid [3-(5-ethoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide, Example 248(p);
- cyclopropanecarboxylic acid [3-(5-fluoro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide, Example 248(q);
- 5 cyclopropanecarboxylic acid [3-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide, Example 248(s);
- N-[3-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-isobutyramide, Example 248(t);
- cyclopropanecarboxylic acid [3-(5-chloro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide, Example 248(u);
- 10 3,5-dimethyl-isoxazole-4-carboxylic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide, Example 248(v);
- furan-3-carboxylic acid [3-(5-chloro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide, Example 248(x);
- N-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-2-morpholin-4-yl-acetamide, (compound
- 15 denoted as A9-B99), Example 253;
- N-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-2-(1H-1,2,3,4-tetraazol-1-yl)-acetamide, (compound denoted as A9-B97), Example 254(a);
- N-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-isonicotinamide; Example 254(b);
- 2-cyclopropyl-N-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-acetamide; Example
- 20 254(c);
- 1-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-methyl-urea, (compound denoted as A9-B38), Example 255(a);
- 1-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-isopropyl-urea, (compound denoted as A9-B103), Example 255(b);
- 25 1-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-phenyl-urea, (compound denoted as A9-B40), Example 255(c);
- 1-benzyl-3-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-urea, (compound denoted as A9-B39), Example 255(d);
- cyclopropanecarboxylic acid[3-(5-ethoxy-6-ethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]amide,
- 30 Example 256(a);
- 4-methylpiperazine-1-carboxylic acid [3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1H-pyrazol-4-yl]amide, Example 256(c);
- 1,1-dimethyl-3-[3-(1,5,6,7-tetrahydro-s-indacen-2-yl)-1H-pyrazol-4-yl]urea, Example 256(d);
- cyclopropanecarboxylic acid [3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]amide,
- 35 Example 257(a);

- tetrahydropyran-4-carboxylic acid [3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]amide, Example 257(b);  
morpholine-4-carboxylic acid [3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]amide, Example 257(c);
- 5 piperidine-4-carboxylic acid [3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]amide, Example 257(d);  
3-[6-ethoxy-5-fluoro-1H-benzimidazol-2-yl]-1H-pyrazol-4-yl]-1,1-diethylurea, Example 257(e);  
3-[3-(5-difluoromethoxy-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-diethyl-urea, Example 257(h);  
piperidine-1-carboxylic acid [3-(5-difluoromethoxy-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide, Example 257(i);
- 10 cyclopropanecarboxylic acid [3-(6-chloro-5-methoxy-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide, Example 258(a);  
cyclopropanecarboxylic acid [3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1H-pyrazol-4-yl]amide, Example 258(b);
- 15 morpholine-4-carboxylic acid [3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1H-pyrazol-4-yl]-amide, Example 258(c);  
piperidine-1-carboxylic acid [3-(5-methoxy-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide, Example 258(d);  
3-[3-(5-methoxy-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-dimethyl-urea, Example 258(e);
- 20 piperidine-1-carboxylic acid [3-(5-ethyl-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide, Example 258(f);  
3-[3-(5-fluoro-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-dimethyl-urea, Example 258(g);  
morpholine-4-carboxylic acid [3-(5-trifluoromethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide, Example 258(h);
- 25 morpholine-4-carboxylic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide, Example 258(n);  
piperidine-1-carboxylic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide, Example 258(o);  
1-cyclopropyl-3-[3-(5-ethyl-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-urea, Example 260(a);
- 30 1-[3-(5-ethyl-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-3-methyl-urea, Example 260(b);  
4-methyl-piperazine-1-carboxylic acid [3-(5-ethyl-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide, Example 260(c);  
piperidine-1-carboxylic acid [3-(5-fluoro-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide, Example 260(d);
- 35 1-[3-(5-fluoro-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-3-methyl-urea, Example 260(e);

morpholine-4-carboxylic acid [3-(5-fluoro-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide, Example 260(f);

1-methyl-3-[3-(5-trifluoromethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-urea, Example 260(h);

1-[3-(5-chloro-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-3-methyl-urea, Example 260(i);

5 4-methyl-piperazine-1-carboxylic acid [3-(5-chloro-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide, Example 260(j);

1-tert-butyl-3-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-urea, Example 260(k);

1-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-3-ethyl-urea, Example 260(l);

4-methyl-piperazine-1-carboxylic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-

10 amide, Example 260(m);

1-cyclopropyl-3-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-urea, Example 260(n);

3-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-diethyl-urea, Example 260(o);

1-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-3-isobutyl-urea, Example 260(p);

1-cyclopropylmethyl-3-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-urea, Example

15 260(q);

3-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-dimethyl-urea, (compound denoted as A9-B142), Example 258(r);

and the corresponding N-oxides, and their prodrugs; and pharmaceutically acceptable salts and solvates (e.g. hydrates) of such compounds and their N-oxides and prodrugs.

20

More especially preferred compounds of formula (Ixa) of the invention for the inhibition of SYK are:-

3-(5-methoxy-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isopropylamide, Example 235(ai);

3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1H-pyrazole-4-carboxylic acid cyclopropylamide,

25 Example 235(ah);

3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid (tetrahydro-pyran-4-yl)-amide, Example 235(am);

3-(5, 6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isobutyl-amide, Example 246(v);

30 cyclopropanecarboxylic acid[3-(5-ethoxy-6-ethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]amide, Example 256(a);

1,1-dimethyl-3-[3-(1,5,6,7-tetrahydro-s-indacen-2-yl)-1H-pyrazol-4-yl]urea, Example 256(d);

piperidine-4-carboxylic acid[3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]amide, Example 257(d);

35 3-[6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-diethylurea, Example 257(e);

3-[3-(5-difluoromethoxy-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-diethyl-urea, Example 257(h);

- piperidine-1-carboxylic acid [3-(5-difluoromethoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide, Example 257(i);
- cyclopropanecarboxylic acid [3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1H-pyrazol-4-yl]amide, Example 258(b);
- 5 piperidine-1-carboxylic acid [3-(5-methoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide, Example 258(d);
- piperidine-1-carboxylic acid [3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide, Example 258(f);
- piperidine-1-carboxylic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide, Example 258(o);
- 10 1-cyclopropyl-3-[3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-urea, Example 260(a);
- piperidine-1-carboxylic acid [3-(5-fluoro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide, Example 260(d);
- 1-tert-butyl-3-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-urea, Example 260(k);
- 15 1-cyclopropyl-3-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-urea, Example 260(n);
- 3-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-diethyl-urea, Example 260(o);
- 1-cyclopropylmethyl-3-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-urea, Example 260(q);
- 3-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-dimethyl-urea, Example 258(r);
- 20 and the corresponding N-oxides, and their prodrugs; and pharmaceutically acceptable salts and solvates (e.g. hydrates) of such compounds and their N-oxides and prodrugs.

Preferred compounds of formula (Ixb) of the invention for the inhibition of SYK are:-

- 3-(1H-benzoimidazol-2-yl)-1H-indazole;
- 25 3-(5-methoxy-1H-benzoimidazol-2-yl)-1H-indazole;
- [2-(indazol-3-yl)-1H-benzoimidazol-5-yl]-phenyl-methanone;
- 2-(1H-indazol-3-yl)-3H-benzoimidazol-4-ol;
- 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-indazole;
- 2-(1H-indazol-3-yl)-3H-imidazo[4,5-c]pyridine;
- 30 2-(1H-indazole-3-yl)-3H-imidazo[4,5-b]pyridine;
- 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-5-methoxy-1H-indazole;
- 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-5-fluoro-1H-indazole;
- 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-6-fluoro-1H-indazole;
- 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-5-methyl-1H-indazole;
- 35 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-6-methoxy-1H-indazole;
- 3-(5-ethyl-1H-benzoimidazol-2-yl)-1H-indazole;

- 3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-indazole;  
3-(5-isopropyl-6-methyl-1H-benzoimidazol-2-yl)-1H-indazole;  
3-(5-bromo-6-methyl-1H-benzoimidazol-2-yl)-1H-indazole;  
3-(5-bromo-1H-benzoimidazol-2-yl)-1H-indazole;
- 5 3-(5-(3-cyano)phenyl-1H-benzoimidazol-2-yl)-1H-indazole;  
3-(5-(pyrid-3-yl)-1H-benzoimidazol-2-yl)-1H-indazole;  
3-(6-methyl-5-phenyl-1H-benzoimidazol-2-yl)-1H-indazole;  
3-(5-phenyl-1H-benzoimidazol-2-yl)-1H-indazole;  
3-(5-(2-fluoro)phenyl-1H-benzoimidazol-2-yl)-1H-indazole;
- 10 3-(5-(5,6-methylenedioxy)phenyl-1H-benzoimidazol-2-yl)-1H-indazole;  
3-(5-(2-methoxy)phenyl-1H-benzoimidazol-2-yl)-1H-indazole;  
3-(5-(4-chloro)phenyl-1H-benzoimidazol-2-yl)-1H-indazole;  
3-(5-(4-methyl)phenyl-1H-benzoimidazol-2-yl)-1H-indazole;  
3-(5-benzyloxy-1H-benzoimidazol-2-yl)-1H-indazole;
- 15 3-(5,6-methylenedioxy-1H-benzoimidazol-2-yl)-1H-indazole;  
3-(5,6-dimethoxy-1H-benzoimidazol-2-yl)-1H-indazole;  
3-(5,6-diethyl-1H-benzoimidazol-2-yl)-1H-indazole;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carbonitrile;  
3-(5-methoxycarbonyl-1H-benzoimidazol-2-yl)-1H-indazole;
- 20 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-5-ethoxy-1H-indazole;  
3-[5-(2-morpholin-4-yl-ethoxy)-1H-benzoimidazol-2-yl]-1H-indazole;  
3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-indazole-5-carbonitrile;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-indazole-5-carbonitrile;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-4-fluoro-1H-indazole;
- 25 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-5-chloro-1H-indazole;  
3-(5-n-propyl-1H-benzoimidazol-2-yl)-1H-indazole;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-sulfonic acid benzylamide;  
3-(5-methanesulfonyl-1H-benzoimidazol-2-yl)-1H-indazole;  
[2-(indazol-3-yl)-1H-benzoimidazol-5-yl]-phenyl-methanol;
- 30 [2-(indazol-3-yl)-1H-benzoimidazol-5-yl]-carboxylic acid;  
[2-(indazol-3-yl)-1H-benzoimidazol-5-yl]-carboxylic acid, methylamide;  
[2-(indazol-3-yl)-1H-benzoimidazol-5-yl]-carboxylic acid, dimethylamide;  
[2-(indazol-3-yl)-1H-benzoimidazol-5-yl]-carboxylic acid, isopropylamide;  
[2-(indazol-3-yl)-1H-benzoimidazol-5-yl]-carboxylic acid, benzylamide;
- 35 [2-(indazol-3-yl)-1H-benzoimidazol-5-yl]-carboxylic acid, benzamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (pyridin-3-ylmethyl)-amide;

- 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 3-methyl-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-methyl-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid [3-(2-oxo-pyrrolidin-1-yl)-propyl]-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2-morpholin-4-yl-ethyl)-amide;  
5 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2-methoxy-ethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2-cyano-ethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2-hydroxy-1,1-dimethyl-ethyl)-amide;  
2-(1H-Indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (3-imidazol-1-yl-propyl)-amide;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-indazole-5-carboxylic acid dimethylamide;  
10 [2-(indazol-3-yl)-1H-benzoimidazol-5-yl]-carboxylic acid;  
3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-indazole-5-carboxylic acid amide dihydrochloride;  
and the corresponding N-oxides, and their prodrugs; and pharmaceutically acceptable salts and solvates  
(e.g. hydrates) of such compounds and their N-oxides and prodrugs.
- 15 Particularly preferred compounds of formula (Ixb), denoted as the product of the combination of group  
A1 in Table 1 and B1 in Table 2, of the invention for the inhibition of SYK are:-  
3-(1H-benzoimidazol-2-yl)-1H-indazole, (compound denoted as A1-B63), Example 234(a);  
3-(5-methoxy-1H-benzoimidazol-2-yl)-1H-indazole, (compound denoted as A6-B63), Example 234(b);  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-indazole, (compound denoted as A9-B63), Example  
20 234(f);  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-5-methoxy-1H-indazole, (compound denoted as A9-B68),  
Example 235(b);  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-5-fluoro-1H-indazole, (compound denoted as A9-B70),  
Example 235(d);  
25 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-6-fluoro-1H-indazole, (compound denoted as A9-B71),  
Example 235(e);  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-5-methyl-1H-indazole, (compound denoted as A9-B64),  
Example 235(f);  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-6-methoxy-1H-indazole, (compound denoted as A9-B69),  
30 Example 235(g);  
3-(5-ethyl-1H-benzoimidazol-2-yl)-1H-indazole, (compound denoted as A27-B63), Example 235(i);  
3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-indazole, (compound denoted as A55-B63), Example  
235(j);  
3-(5-isopropyl-6-methyl-1H-benzoimidazol-2-yl)-1H-indazole, (compound denoted as A54-B63),  
35 Example 235(k);



- 3-(5-bromo-6-methyl-1H-benzoimidazol-2-yl)-1H-indazole, (compound denoted as A58-B63), Example 235(l);
- 3-(5-bromo-1H-benzoimidazol-2-yl)-1H-indazole, (compound denoted as A32-B63), Example 235(m);
- 3-(5-(3-cyano)phenyl-1H-benzoimidazol-2-yl)-1H-indazole, (compound denoted as A68-B63),
- 5 Example 235(n);
- 3-(5-(pyrid-3-yl)-1H-benzoimidazol-2-yl)-1H-indazole, (compound denoted as A69-B63), Example 235(o);
- 3-(6-methyl-5-phenyl-1H-benzoimidazol-2-yl)-1H-indazole, (compound denoted as A57-B63), Example 235(p);
- 10 3-(5-phenyl-1H-benzoimidazol-2-yl)-1H-indazole, (compound denoted as A60-B63), Example 235(q);
- 3-(5-(2-fluoro)phenyl-1H-benzoimidazol-2-yl)-1H-indazole, (compound denoted as A65-B63), Example 235(r);
- 3-(5-(3,4-methylenedioxy)phenyl-1H-benzoimidazol-2-yl)-1H-indazole, (compound denoted as A66-B63), Example 235(s);
- 15 3-(5-benzyloxy-1H-benzoimidazol-2-yl)-1H-indazole, (compound denoted as A74-B63), Example 235(w);
- 3-(5,6-methylenedioxy-1H-benzoimidazol-2-yl)-1H-indazole, (compound denoted as A22-B63), Example 235(x);
- 3-(5,6-dimethoxy-1H-benzoimidazol-2-yl)-1H-indazole, (compound denoted as A23-B63), Example
- 20 235(y);
- 3-(5,6-diethyl-1H-benzoimidazol-2-yl)-1H-indazole, (compound denoted as A56-B63), Example 235(z);
- 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carbonitrile, (compound denoted as A33-B63), Example 235(ab);
- 25 3-(5-methoxycarbonyl-1H-benzoimidazol-2-yl)-1H-indazole, (compound denoted as A35-B63), Example 235(ac);
- 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-5-ethoxy-1H-indazole, (compound denoted as A9-B63), (compound denoted as A9-B112), Example 235(ad);
- 3-[5-(2-morpholin-4-yl-ethoxy)-1H-benzoimidazol-2-yl]-1H-indazole, Example 235(aj);
- 30 3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-indazole-5-carbonitrile, Example 235(an);
- 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-indazole-5-carbonitrile, Example 235(ar);
- 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-4-fluoro-1H-indazole, (compound denoted as A9-B110), Example 242(a);
- 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-5-chloro-1H-indazole, (compound denoted as A9-B109),
- 35 Example 242(c);

- 3-(5-n-propyl-1H-benzoimidazol-2-yl)-1H-indazole, (compound denoted as A28-B63), Example 244(a);
- 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-sulfonic acid benzylamide, Example 244(b);
- 3-(5-methanesulfonyl-1H-benzoimidazol-2-yl)-1H-indazole; Example 244(c)
- 5 [2-(indazol-3-yl)-1H-benzoimidazol-5-yl]-phenyl-methanol, (compound denoted as A34-B63), Example 245;
- [2-(indazol-3-yl)-1H-benzoimidazol-5-yl]-carboxylic acid, ethylamide, (compound denoted as A36-B63), Example 246(a);
- [2-(indazol-3-yl)-1H-benzoimidazol-5-yl]-carboxylic acid, methylamide, (compound denoted as
- 10 A15-B63), Example 246(b);
- [2-(indazol-3-yl)-1H-benzoimidazol-5-yl]-carboxylic acid, isopropylamide, (compound denoted as A16-B63), Example 246(d);
- [2-(indazol-3-yl)-1H-benzoimidazol-5-yl]-carboxylic acid, benzylamide, (compound denoted as A17-B63), Example 246(e);
- 15 [2-(indazol-3-yl)-1H-benzoimidazol-5-yl]-carboxylic acid, benzamide, (compound denoted as A52-B63), Example 246(f);
- 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (pyridin-3-ylmethyl)-amide, Example 246(m);
- 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 3-methyl-benzylamide, Example 246(n);
- 20 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-methyl-benzylamide, Example 246(o);
- 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid [3-(2-oxo-pyrrolidin-1-yl)-propyl]-amide, Example 246(p);
- 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2-morpholin-4-yl-ethyl)-amide, Example 246(q);
- 25 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2-methoxy-ethyl)-amide, Example 246(r);
- 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2-cyano-ethyl)-amide, Example 246(s);
- 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2-hydroxy-1,1-dimethyl-ethyl)-amide, Example 246(t);
- 2-(1H-Indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (3-imidazol-1-yl-propyl)-amide, Example
- 30 246(u),
- 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-indazole-5-carboxylic acid dimethylamide, Example 246(x);
- [2-(indazol-3-yl)-1H-benzoimidazol-5-yl]-carboxylic acid, (compound denoted as A14-B63), Example 247(a);
- 35 3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-indazole-5-carboxylic acid amide dihydrochloride, Example 262;

and the corresponding N-oxides, and their prodrugs; and pharmaceutically acceptable salts and solvates (e.g. hydrates) of such compounds and their N-oxides and prodrugs.

Especially preferred compounds of formula (Ixb) of the invention for the inhibition of SYK are:-

5 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-5-methoxy-1H-indazole, (compound denoted as A9-B68),

Example 235(b);

3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-indazole, (compound denoted as A55-B63), Example 235(j);

10 3-(5,6-diethyl-1H-benzoimidazol-2-yl)-1H-indazole, (compound denoted as A56-B63), Example 235(z);

3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-indazole-5-carboxylic acid dimethylamide, Example 246(x);

and the corresponding N-oxides, and their prodrugs; and pharmaceutically acceptable salts and solvates (e.g. hydrates) of such compounds and their N-oxides and prodrugs.

15

Preferred compounds of formula (Ixc) of the invention for the inhibition of SYK are:-

3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-4,5,6,7-tetrahydro-1H-indazole;

5,6-dimethyl-2-(1,4,5,6-tetrahydro-cyclopentapyrazol-3-yl)-1H-benzoimidazole;

3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1,4,5,6,7,8-hexahydro-cycloheptapyrazole;

20 and the corresponding N-oxides, and their prodrugs; and pharmaceutically acceptable salts and solvates (e.g. hydrates) of such compounds and their N-oxides and prodrugs.

Particularly preferred compounds of formula (Ixc), denoted as the product of the combination of group A1 in Table 1 and B1 in Table 2, of the invention for the inhibition of SYK are:-

25 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-4,5,6,7-tetrahydro-1H-indazole, (compound denoted as A9-B59), Example 241(a);

5,6-dimethyl-2-(1,4,5,6-tetrahydro-cyclopentapyrazol-3-yl)-1H-benzoimidazole, (compound denoted as A9-B56), Example 241(d);

30 and the corresponding N-oxides, and their prodrugs; and pharmaceutically acceptable salts and solvates (e.g. hydrates) of such compounds and their N-oxides and prodrugs.

Preferred compounds of formula (Ixd) of the invention for the inhibition of SYK are:-

3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid isopropylamide;

35 cyclopropyl-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-methanone;

- isopropyl-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-methanone;
- 1-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-ethanone;
- 1-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-2-methyl-
- 5 propan-1-one;
- 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid methyl ester;
- 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid dimethylamide;
- 10 1-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-3-methylbutan-1-one;
- 1-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-2,2-dimethyl-propan-1-one;
- 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid
- 15 methyl ester;
- 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid isopropylamide;
- 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid diethylamide;
- 20 [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-pyrrolidin-1-yl-methanone;
- [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-piperidin-1-yl-methanone;
- [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-morpholin-4-
- 25 yl-methanone;
- 3-(5-chloro-6-methyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid diethylamide;
- 3-[5-(2-morpholin-4-yl-ethoxy)-1H-benzimidazol-2-yl]-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid diethylamide;
- 30 3-(5-trifluoromethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid diethylamide;
- 1-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-2,2-dimethyl-propan-1-one;
- 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-5-(propane-2-sulfonyl)-4,5,6,7-tetrahydro-1H-pyrazolo[4,3-
- 35 c]pyridine;
- 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrano[4,3-c]pyrazole;

and the corresponding N-oxides, and their prodrugs; and pharmaceutically acceptable salts and solvates (e.g. hydrates) of such compounds and their N-oxides and prodrugs.

Particularly preferred compounds of formula (Ixd), denoted as the product of the combination of group

5 A1 in Table 1 and B1 in Table 2, of the invention for the inhibition of SYK are:-

3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid isopropylamide, (compound denoted as A9-B121), Example 250(a);

cyclopropyl-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-methanone, (compound denoted as A9-B122);

10 isopropyl-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-methanone;

1-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-2,2-dimethyl-propan-1-one;

3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid methyl ester;

15 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid isopropylamide; 26(e)

prepared 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid diethylamide;

20 [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-pyrrolidin-1-yl-methanone;

[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-piperidin-1-yl-methanone;

[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-morpholin-4-yl-methanone;

25 3-(5-chloro-6-methyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid diethylamide;

3-[5-(2-morpholin-4-yl-ethoxy)-1H-benzoimidazol-2-yl]-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid diethylamide;

30 3-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid diethylamide;

3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid dimethylamide, (compound denoted as A9-B119);

1-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-2-methyl-propan-1-one, (compound denoted as A9-B117);

35

- 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid methyl ester, (compound denoted as A9-B120);  
1-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-3-methylbutan-1-one, (compound denoted as A9-B118);
- 5 1-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-2,2-dimethyl-propan-1-one, (compound denoted as A9-B123);  
and the corresponding N-oxides, and their prodrugs; and pharmaceutically acceptable salts and solvates (e.g. hydrates) of such compounds and their N-oxides and prodrugs.
- 10 Especially preferred compounds of formula (Ixd), denoted as the product of the combination of group A1 in Table 1 and B1 in Table 2, of the invention for the inhibition of SYK are:-  
3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid isopropylamide, (compound denoted as A9-B121), Example 250(a);  
cyclopropyl-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-
- 15 methanone, (compound denoted as A9-B122); Example 250(b);  
3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid isopropylamide, Example 255(e);  
prepared 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid diethylamide, Example 258(i);
- 20 [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-pyrrolidin-1-yl-methanone, Example 258(j);  
[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-piperidin-1-yl-methanone, Example 258(k);  
3-(5-chloro-6-methyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic
- 25 acid diethylamide, Example 258(m);  
3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid dimethylamide, (compound denoted as A9-B119);  
and the corresponding N-oxides, and their prodrugs; and pharmaceutically acceptable salts and solvates (e.g. hydrates) of such compounds and their N-oxides and prodrugs.
- 30 Particular compounds of formula (Ix) of the invention for the inhibition of KDR are:-  
2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid benzylamide;  
2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-methylamide;  
2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-ethylamide;  
2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-isopropylamide;
- 35 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-phenylamide;

- 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-phenethylamide;  
2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-morpholinoamide;  
2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-(N'-methylpiperazino)amide;  
2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-pyrrolidinoamide;  
5 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-(isobutyl)amide;  
2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-(cyclohexylmethyl)amide;  
2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-(2-furfuryl)amide;  
2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-benzyl-N-methylamide;  
methyl 2-(1H-indazol-3-yl)-3H-benzimidazole-5-carboxylate;  
10 5,6-dimethyl-2-(1H-indazol-3-yl)-1H-benzimidazole;  
5-methoxy-2-(1H-indazol-3-yl)-1H-benzimidazole;  
2-(1H-indazol-3-yl)-3H-benzimidazole-4-carboxylic acid;  
5-bromo 2-(1H-indazol-3-yl)-3H-benzimidazole;  
2-(5-ethoxy-2H-pyrazol-3-yl)-1H-benzimidazole-4-carboxylic acid;  
15 5,6-dimethyl-2-(5-methyl-2H-pyrazol-3-yl)-1H-benzimidazole;  
5,6-dimethyl-2-(5-thiophen-2-yl-2H-pyrazol-3-yl)-1H-benzimidazole;  
2-(4-bromo-2H-pyrazol-3-yl)-5,6-dimethyl-1H-benzimidazole;  
2-(5-ethyl-2H-pyrazol-3-yl)-5,6-dimethyl-1H-benzimidazole;  
2-(5-ethyl-2H-pyrazol-3-yl)-4,5-ethylenedioxy-1H-benzimidazole;  
20 2-(5-ethyl-2H-pyrazol-3-yl)-5-methoxy-1H-benzimidazole;  
2-(5-ethyl-2H-pyrazol-3-yl)-4-hydroxy-1H-benzimidazole  
2-(5-ethyl-2H-pyrazol-3-yl)-5-bromo-1H-benzimidazole;  
2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid 2,4-dichloro-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid (3-ethoxy-propyl)-amide;  
25 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid 4-bromo-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid 4-methanesulfonyl-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid (naphthalen-1-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid 4-trifluoromethyl-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid (thiophen-2-ylmethyl)-amide;  
30 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid 4-dimethylamino-benzylamide;  
4-({[2-(1H-indazol-3-yl)-1H-benzimidazole-5-carbonyl]-amino}-methyl)-piperidine-1-carboxylic  
acid tert-butyl ester;  
2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid 4-nitro-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid (pyridin-3-ylmethyl)-amide;  
35 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid 3-bromo-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid 3-methoxy-benzylamide;

- 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (benzo[1,3]dioxol-5-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (benzo[b]thiophen-3-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (1,3-dimethyl-1H-pyrazol-4-ylmethyl)-amide;
- 5 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 2-trifluoromethoxy-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 2-methyl-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (3-methyl-thiophen-2-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 2-trifluoromethyl-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-phenoxy-benzylamide;
- 10 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 3-trifluoromethoxy-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (3-isopropoxy-propyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (1-methyl-1H-pyrazol-4-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-isopropyl-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2,5-dimethyl-furan-3-ylmethyl)-amide;
- 15 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (benzo[b]thiophen-2-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid [3-(3-acetylamino-phenoxy)-propyl]-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (6-chloro-pyridin-3-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid ([2,2']bithiophenyl-5-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2,3-dihydro-benzofuran-5-ylmethyl)-
- 20 amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-cyano-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (5-chloro-benzo[b]thiophen-3-ylmethyl)-amide;
- 25 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 3-trifluoromethyl-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 2-methylsulfanyl-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (benzo[b]thiophen-3-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (tetrahydro-pyran-4-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2,3-dihydro-benzo[1,4]dioxin-2-ylmethyl)-amide;
- 30 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (furan-3-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 2-nitro-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (thiophen-3-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 3,5-dimethyl-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (1-methyl-1H-benzoimidazol-2-ylmethyl)-
- 35 amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 3-methyl-benzylamide;



- 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 3-chloro-benzylamide;  
2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid 4-sulfamoyl-benzylamide;  
2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid (3-ethoxy-propyl)-amide;  
2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid 4-bromo-benzylamide;  
5 2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid (naphthalen-1-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid (thiophen-2-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid 4-dimethylamino-benzylamide;  
2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid 4-nitro-benzylamide;  
2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid (pyridin-3-ylmethyl)-amide;  
10 2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid 3-bromo-benzylamide;  
2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid 3-methoxy-benzylamide;  
2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid (benzo[b]thiophen-3-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid 4-phenoxy-benzylamide;  
2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid 3-trifluoromethoxy-benzylamide;  
15 2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid (6-chloro-pyridin-3-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid (2,3-dihydro-benzofuran-5-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid 3-trifluoromethyl-benzylamide;  
2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid 2-methylsulfanyl-benzylamide;  
20 2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid (furan-3-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid 2-nitro-benzylamide;  
2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid 3,5-dimethyl-benzylamide;  
2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid 3-chloro-benzylamide;  
2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid phenylamide;  
25 2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid benzylamide;  
2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid phenethyl-amide;  
3-(6-phenyl-1H-benzoimidazol-2-yl)-2H-indazole;  
3-[6-(2,4-dichloro-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
3-(6-naphthalen-1-yl-1H-benzoimidazol-2-yl)-2H-indazole;  
30 3-[6-(4-fluoro-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
3-[6-(4-chloro-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
3-[6-(4-methoxy-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
3-[6-(3-chloro-4-fluoro-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
3-[6-(3,5-dichloro-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
35 3-(6-thianthren-1-yl-1H-benzoimidazol-2-yl)-2H-indazole;  
3-(6-biphenyl-4-yl-1H-benzoimidazol-2-yl)-2H-indazole;

- 3-(6-p-tolyl-1H-benzoimidazol-2-yl)-2H-indazole;  
3-(6-m-tolyl-1H-benzoimidazol-2-yl)-2H-indazole;  
3-(6-o-tolyl-1H-benzoimidazol-2-yl)-2H-indazole;  
3-(6-thiophen-3-yl-1H-benzoimidazol-2-yl)-2H-indazole;  
5 3-[6-(3-trifluoromethyl-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
3-[6-(4-trifluoromethyl-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
3-[6-(3-chloro-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
3-[6-(3-methoxy-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
3-[6-(3,5-dimethyl-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
10 3-[6-(3,4-dimethyl-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
3-(6-benzo[1,3]dioxol-5-yl-1H-benzoimidazol-2-yl)-2H-indazole;  
3-[6-(4-tert-butyl-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
3-(6-hex-1-enyl-1H-benzoimidazol-2-yl)-2H-indazole;  
3-[6-(3,4-dimethoxy-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
15 3-[2-(2H-indazol-3-yl)-3H-benzoimidazol-5-yl]-phenol;  
4-[2-(2H-indazol-3-yl)-3H-benzoimidazol-5-yl]-phenol;  
3-[6-(3,4-dichloro-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
3-[6-(4-trifluoromethoxy-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
1-{4-[2-(2H-indazol-3-yl)-3H-benzoimidazol-5-yl]-phenyl}-ethanone;  
20 3-(6-benzo[b]thiophen-2-yl-1H-benzoimidazol-2-yl)-2H-indazole;  
3-[6-(3,4,5-trimethoxy-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
1-{5-[2-(2H-indazol-3-yl)-3H-benzoimidazol-5-yl]-thiophen-2-yl}-ethanone;  
1-{3-[2-(2H-indazol-3-yl)-3H-benzoimidazol-5-yl]-phenyl}-ethanone;  
3-[6-(4-benzyloxy-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
25 3-[6-(2-fluoro-biphenyl-4-yl)-1H-benzoimidazol-2-yl]-2H-indazole;  
3-(6-benzo[b]thiophen-3-yl-1H-benzoimidazol-2-yl)-2H-indazole;  
{3-[2-(2H-indazol-3-yl)-3H-benzoimidazol-5-yl]-phenyl}-methanol;  
3-[6-(4-ethylsulfanyl-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
3-[6-(2,4-difluoro-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
30 3-[6-(3-trifluoromethoxy-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
3-[6-(4-fluoro-2-methyl-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
3-{6-[2-(4-fluoro-phenyl)-vinyl]-1H-benzoimidazol-2-yl}-2H-indazole;  
3-{6-[2-(4-chloro-phenyl)-vinyl]-1H-benzoimidazol-2-yl}-2H-indazole;  
3-{4-[2-(2H-indazol-3-yl)-3H-benzoimidazol-5-yl]-phenyl}-propionic acid;  
35 {4-[2-(2H-indazol-3-yl)-3H-benzoimidazol-5-yl]-phenyl}-methanol;  
3-(6-furan-2-yl-1H-benzoimidazol-2-yl)-2H-indazole;

- 3-[6-(3-benzyloxy-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
3-[6-(4-isopropyl-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
3-[6-(4-methanesulfonyl-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (tetrahydro-pyran-4-ylmethyl)-amide;  
5 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-acetylamino-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid methylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid isopropylamide;  
[2-(1H-indazol-3-yl)-1H-benzoimidazol-5-yl]-morpholin-4-yl-methanone;  
[2-(1H-indazol-3-yl)-1H-benzoimidazol-5-yl]-(4-methyl-piperazin-1-yl)-methanone;  
10 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid benzyl-methyl-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 3-nitro-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 2-fluoro-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 2,4-difluoro-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 2,6-difluoro-benzylamide;  
15 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-bromo-2-fluoro-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-chloro-2-fluoro-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-bromo-2-fluoro-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 3,4-difluoro-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 3,4,5-trifluoro-benzylamide;  
20 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (4'-chloro-biphenyl-4-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (3',5'-dichloro-biphenyl-4-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (4'-fluoro-biphenyl-4-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 2-fluoro-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 2,6-difluoro-3-methyl-benzylamide;  
25 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 2,4-dichloro-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-chloro-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-chloro-2-methyl-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-fluoro-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2'-chloro-biphenyl-4-ylmethyl)-amide;  
30 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (6-trifluoromethyl-pyridin-3-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (5-pyridin-2-yl-thiophen-2-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (3-imidazol-1-yl-propyl)-amide;  
35 4-[2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carbonyl]-piperazine-1-carboxylic acid tert-butyl ester;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2,6-difluoro-4-chloro-benzyl)amide;

- 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2,4-dichloro-6-fluoro-benzyl)amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (3-fluoro-4-chloro-benzyl)amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2-fluoro-4-chloro-6-methyl-benzyl)amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (6-methoxy-pyridin-3-ylmethyl)-amide;
- 5 2-[5-(benzyloxy)-2H-pyrazol-3-yl]-1H-benzoimidazole;  
2-[5-(3-phenyl-allyloxy)2H-pyrazol-3-yl]-1H-benzoimidazole;  
2-[5-(2-methyl-allyloxy)2H-pyrazol-3-yl]-1H-benzoimidazole;  
2-[5-(3,7-dimethyl-octa-2,6-dienyloxy)-2H-pyrazol-3-yl]-1H-benzoimidazole;  
2-[5-(3-bromo-benzyloxy)-2H-pyrazol-3-yl]-1H-benzoimidazole;
- 10 3-[5-(1H-benzoimidazol-2-yl)-1H-pyrazol-3-yloxymethyl]-benzonitrile;  
2-[5-(4-trifluoromethyl-benzyloxy)-2H-pyrazol-3-yl]-1H-benzoimidazole;  
2-[5-(3,4-dichloro-benzyloxy)-2H-pyrazol-3-yl]-1H-benzoimidazole;  
2-[5-pentafluorophenylmethoxy)-2H-pyrazol-3-yl]-1H-benzoimidazole;  
2-[5-(4-*tert*-butyl-benzyloxy)-2H-pyrazol-3-yl]-1H-benzoimidazole;
- 15 2-[5-(2-benzenesulfonylmethyl-benzyloxy)-2H-pyrazol-3-yl]-1H-benzoimidazole;  
4-[5-(1H-benzoimidazol-2-yl)-1H-pyrazol-3-yloxymethyl]-benzonitrile;  
2-[5-(biphenyl-4-ylmethoxy)-2H-pyrazol-3-yl]-1H-benzoimidazole;  
2,3-dichloro-benzenesulfonic acid 5-(1 H-benzoimidazol-2-yl)-1H-pyrazol-3-yl ester;  
2-[5-(2-morpholin-4-yl-ethoxy)-2H-pyrazol-3-yl]-1H-benzoimidazole;
- 20 2-[5-(2-piperidin-1-yl-ethoxy)-2H-pyrazol-3-yl]-1H-benzoimidazole;  
2-[5-(3-methoxy-benzyloxy)-2H-pyrazol-3-yl]-1H-benzoimidazole;  
2-[5-(1H-benzoimidazol-2-yl)-1H-pyrazol-3-yloxy]-1-*p*-tolyl-ethanone;  
1-[5-(1H-benzoimidazol-2-yl)-1H-pyrazol-3-yloxy]-3,3,4,4,4-pentafluoro-butan-2-one;  
2-[5-(1H-benzoimidazol-2-yl)-1H-pyrazol-3-yloxy]-1-biphenyl-4-yl-ethanone;
- 25 1-[5-(1H-benzoimidazol-2-yl)-1H-pyrazol-3-yloxy]-butan-2-one;  
2-[5-(1H-benzoimidazol-2-yl)-1H-pyrazol-3-yloxy]-1-(4-dimethylamino-phenyl)-ethanone;  
2-[5-(1H-benzoimidazol-2-yl)-1H-pyrazol-3-yloxy]-1-(3-phenyl-isoxazol-5-yl)-ethanone;  
2-[5-(1H-benzoimidazol-2-yl)-1H-pyrazol-3-yloxy]-N-phenyl-acetamide;  
1-[5-(1H-benzoimidazol-2-yl)-1H-pyrazol-3-yloxy]-3,3-dimethyl-butan-2-one;
- 30 1-adamantan-1-yl-2-[5-(1H-benzoimidazol-2-yl)-1H-pyrazol-3-yloxy]-ethanone;  
2-[5-(1H-benzoimidazol-2-yl)-1H-pyrazol-3-yloxy]-1-naphthalen-2-yl-ethanone;  
4-{2-[5-(1H-benzoimidazol-2-yl)-1H-pyrazol-3-yloxy]-acetyl}-benzonitrile;  
6-{2-[5-(1H-benzoimidazol-2-yl)-1H-pyrazol-3-yloxy]-acetyl}-3,4-dihydro-1H-quinolin-2-one;  
2-[5-(1H-benzoimidazol-2-yl)-1H-pyrazol-3-yloxy]-1-(4-trifluoromethoxy-phenyl)-ethanone;
- 35 5-{2-[5-(1H-benzoimidazol-2-yl)-1H-pyrazol-3-yloxy]-acetyl}-2-chloro-benzenesulfonamide;  
2-[5-(1H-benzoimidazol-2-yl)-1H-pyrazol-3-yloxy]-1-(4-methoxy-phenyl)-ethanone;

- 2-[5-(1H-benzimidazol-2-yl)-1H-pyrazol-3-yloxy]-1-cyclopropyl-ethanone;  
 isonicotinic acid 5-(1H-benzimidazol-2-yl)-1H-pyrazol-3-yl ester;  
 2,2-dimethyl-propionic acid 5-(1H-benzimidazol-2-yl)-1H-pyrazol-3-yl ester;  
 benzyloxy-acetic acid 5-(1H-benzimidazol-2-yl)-1H-pyrazol-3-yl ester;
- 5 benzoic acid 5-(1H-benzimidazol-2-yl)-1H-pyrazol-3-yl ester;  
 4-methoxy-benzoic acid 5-(1H-benzimidazol-2-yl)-1H-pyrazol-3-yl ester;  
 phenyl-acetic acid 5-(1H-benzimidazol-2-yl)-1H-pyrazol-3-yl ester;  
 2,3,4,5,6-Pentafluoro-benzoic acid 5-(1H-benzimidazol-2-yl)-1H-pyrazol-3-yl ester;  
 cyclopropanecarboxylic acid 5-(1H-benzimidazol-2-yl)-1H-pyrazol-3-yl ester;
- 10 2,2,3,3,4,4,4-heptafluoro-butyric acid 5-(1H-benzimidazol-2-yl)-1H-pyrazol-3-yl ester;  
 cyclopentanecarboxylic acid 5-(1H-benzimidazol-2-yl)-1H-pyrazol-3-yl ester;  
 3-phenyl-propionic acid 5-(1H-benzimidazol-2-yl)-1H-pyrazol-3-yl ester;  
 biphenyl-4-carboxylic acid 5-(1H-benzimidazol-2-yl)-1H-pyrazol-3-yl ester;  
 3,5-bis-trifluoromethyl-benzoic acid 5-(1H-benzimidazol-2-yl)-1H-pyrazol-3-yl ester;
- 15 4-trifluoromethyl-benzoic acid 5-(1H-benzimidazol-2-yl)-1H-pyrazol-3-yl ester;  
 thiophene-2-carboxylic acid 5-(1H-benzimidazol-2-yl)-1H-pyrazol-3-yl ester;  
 and the corresponding N-oxides, and their prodrugs; and pharmaceutically acceptable salts and solvates  
 (e.g. hydrates) of such compounds and their N-oxides and prodrugs.
- 20 Preferred compounds of formula (Ixa), denoted as the product of the combination of group A1 in Table  
 1 and B1 in Table 2, of the invention for the inhibition of KDR are:-  
 2-(5-ethyl-2H-pyrazol-3-yl)-5,6-dimethyl-1H-benzimidazole, (compound denoted as A9-B3);  
 2-(5-methyl-2H-pyrazol-3-yl)-5,6-dimethyl-1H-benzimidazole (compound denoted as A9-B2);  
 and the corresponding N-oxides, and their prodrugs; and pharmaceutically acceptable salts and solvates
- 25 (e.g. hydrates) of such compounds and their N-oxides and prodrugs.
- Preferred compounds of formula (Ixb), denoted as the product of the combination of group A1 in Table  
 1 and B1 in Table 2, of the invention for the inhibition of KDR are:-  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid benzylamide, (compound denoted as
- 30 A17-B63);  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-methylamide, (compound denoted as  
 A15-B63);  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-ethylamide, (compound denoted as  
 A36-B63);
- 35 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-isopropylamide, (compound denoted as  
 A37-B63);

- 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-phenylamide, (compound denoted as A52-B63);
- 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-phenethylamide, (compound denoted as A51-B63);
- 5 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-morpholinoamide, (compound denoted as A92-B63);
- 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-(N'-methylpiperazino)amide, (compound denoted as A93-B63);
- 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-pyrrolidinoamide, (compound denoted as
- 10 A91-B63);
- 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-(isobutyl)amide, (compound denoted as A82-B63);
- 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-(cyclohexylmethyl)amide, (compound denoted as A83-B63);
- 15 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-(2-furfuryl)amide, (compound denoted as A84-B63);
- 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-benzyl-N-methylamide, (compound denoted as A90-B63);
- 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 2,4-dichloro-benzylamide;
- 20 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (3-ethoxy-propyl)-amide;
- 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-bromo-benzylamide;
- 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-methanesulfonyl-benzylamide;
- 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (naphthalen-1-ylmethyl)-amide;
- 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-trifluoromethyl-benzylamide;
- 25 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (thiophen-2-ylmethyl)-amide;
- 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-dimethylamino-benzylamide;
- 4-([2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carbonyl]-amino)-methyl-piperidine-1-carboxylic acid tert-butyl ester;
- 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-nitro-benzylamide;
- 30 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (pyridin-3-ylmethyl)-amide;
- 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 3-bromo-benzylamide;
- 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 3-methoxy-benzylamide;
- 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (benzo[1,3]dioxol-5-ylmethyl)-amide;
- 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (benzo[b]thiophen-3-ylmethyl)-amide;
- 35 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (1,3-dimethyl-1H-pyrazol-4-ylmethyl)-amide;

- 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 2-trifluoromethoxy-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 2-methyl-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (3-methyl-thiophen-2-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 2-trifluoromethyl-benzylamide;  
5 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-phenoxy-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 3-trifluoromethoxy-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (3-isopropoxy-propyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (1-methyl-1H-pyrazol-4-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-isopropyl-benzylamide;  
10 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2,5-dimethyl-furan-3-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (benzo[b]thiophen-2-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid [3-(3-acetylamino-phenoxy)-propyl]-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (6-chloro-pyridin-3-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid ([2,2']bithiophenyl-5-ylmethyl)-amide;  
15 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2,3-dihydro-benzofuran-5-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-cyano-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 2-methylsulfanyl-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (benzo[b]thiophen-3-ylmethyl)-amide;  
20 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (tetrahydro-pyran-4-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2,3-dihydro-benzo[1,4]dioxin-2-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (furan-3-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 2-nitro-benzylamide;  
25 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (thiophen-3-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 3,5-dimethyl-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (1-methyl-1H-benzoimidazol-2-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 3-methyl-benzylamide;  
30 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 3-chloro-benzylamide;  
2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid 4-sulfamoyl-benzylamide;  
2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid (pyridin-3-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid 3-methoxy-benzylamide;  
2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid 2-methylsulfanyl-benzylamide;  
35 2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid (furan-3-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid 2-nitro-benzylamide;

- 2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid 3,5-dimethyl-benzylamide;  
2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid phenylamide;  
3-[6-(4-fluoro-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
3-[6-(4-methoxy-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
5 3-[6-(3-chloro-4-fluoro-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
3-(6-m-tolyl-1H-benzoimidazol-2-yl)-2H-indazole;  
3-(6-o-tolyl-1H-benzoimidazol-2-yl)-2H-indazole;  
3-(6-thiophen-3-yl-1H-benzoimidazol-2-yl)-2H-indazole;  
3-[6-(3-chloro-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
10 3-[6-(3-methoxy-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
3-[6-(3,5-dimethyl-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
3-(6-benzo[1,3]dioxol-5-yl-1H-benzoimidazol-2-yl)-2H-indazole;  
3-(6-hex-1-enyl-1H-benzoimidazol-2-yl)-2H-indazole;  
3-[6-(3,4-dimethoxy-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
15 3-[2-(2H-indazol-3-yl)-3H-benzoimidazol-5-yl]-phenol;  
4-[2-(2H-indazol-3-yl)-3H-benzoimidazol-5-yl]-phenol;  
3-[6-(3,4,5-trimethoxy-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
1-{5-[2-(2H-indazol-3-yl)-3H-benzoimidazol-5-yl]-thiophen-2-yl}-ethanone;  
{3-[2-(2H-indazol-3-yl)-3H-benzoimidazol-5-yl]-phenyl}-methanol;  
20 3-[6-(2,4-difluoro-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
3-[6-(4-fluoro-2-methyl-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
{4-[2-(2H-indazol-3-yl)-3H-benzoimidazol-5-yl]-phenyl}-methanol;  
3-(6-furan-2-yl-1H-benzoimidazol-2-yl)-2H-indazole;  
3-[6-(4-isopropyl-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
25 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (tetrahydro-pyran-4-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-acetylamino-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid methylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid isopropylamide;  
[2-(1H-indazol-3-yl)-1H-benzoimidazol-5-yl]-morpholin-4-yl-methanone;  
30 [2-(1H-indazol-3-yl)-1H-benzoimidazol-5-yl]-(4-methyl-piperazin-1-yl)-methanone;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid benzyl-methyl-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 3-nitro-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 2-fluoro-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 2,4-difluoro-benzylamide;  
35 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 2,6-difluoro-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-bromo-2-fluoro-benzylamide;



- 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-chloro-2-fluoro-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-bromo-2-fluoro-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 3,4-difluoro-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 3,4,5-trifluoro-benzylamide;  
5 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 2,6-difluoro-3-methyl-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 2,4-dichloro-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-chloro-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-chloro-2-methyl-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-fluoro-benzylamide;  
10 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2'-chloro-biphenyl-4-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (6-trifluoromethyl-pyridin-3-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (5-pyridin-2-yl-thiophen-2-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (3-imidazol-1-yl-propyl)-amide;  
15 4-[2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carbonyl]-piperazine-1-carboxylic acid tert-butyl ester;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2,6-difluoro-4-chloro-benzyl)amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2,4-dichloro-6-fluoro-benzyl)amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (3-fluoro-4-chloro-benzyl)amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2-fluoro-4-chloro-6-methyl-benzyl)amide;  
20 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (6-methoxy-pyridin-3-ylmethyl)-amide;  
2-[5-(benzyloxy)-2H-pyrazol-3-yl]-1H-benzoimidazole;  
2-[5-(3-phenyl-allyloxy)-2H-pyrazol-3-yl]-1H-benzoimidazole;  
2-[5-(3,7-dimethyl-octa-2,6-dienyloxy)-2H-pyrazol-3-yl]-1H-benzoimidazole;  
2-[5-(3-bromo-benzyloxy)-2H-pyrazol-3-yl]-1H-benzoimidazole;  
25 2-[5-(3,4-dichloro-benzyloxy)-2H-pyrazol-3-yl]-1H-benzoimidazole;  
2-[5-(2-benzenesulfonylmethyl-benzyloxy)-2H-pyrazol-3-yl]-1H-benzoimidazole;  
2-[5-(biphenyl-4-ylmethoxy)-2H-pyrazol-3-yl]-1H-benzoimidazole;  
2-[5-(3-methoxy-benzyloxy)-2H-pyrazol-3-yl]-1H-benzoimidazole;  
isonicotinic acid 5-(1H-benzoimidazol-2-yl)-1H-pyrazol-3-yl ester;  
30 benzoic acid 5-(1H-benzoimidazol-2-yl)-1H-pyrazol-3-yl ester;  
3-phenyl-propionic acid 5-(1H-benzoimidazol-2-yl)-1H-pyrazol-3-yl ester;  
methyl 2-(1H-indazol-3-yl)-3H-benzimidazole-5-carboxylate;  
5-methoxy-2-(1H-indazol-3-yl)-1H-benzimidazole;  
5-bromo 2-(1H-indazol-3-yl)-3H-benzimidazole, (compound denoted as A32-B63);  
35 and the corresponding N-oxides, and their prodrugs; and pharmaceutically acceptable salts and solvates (e.g. hydrates) of such compounds and their N-oxides and prodrugs.

Particularly preferred compounds of formula (Ixb) of the invention for the inhibition of KDR are:-

- 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-(cyclohexylmethyl)amide;
  - 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-(2-furfuryl)amide;
  - 5 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 2,4-dichloro-benzylamide;
  - 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-bromo-benzylamide;
  - 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-methanesulfonyl-benzylamide;
  - 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-nitro-benzylamide;
  - 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 2-methyl-benzylamide;
  - 10 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (6-chloro-pyridin-3-ylmethyl)-amide;
  - 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2,3-dihydro-benzofuran-5-ylmethyl)-amide;
  - 2-(1H-Indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 2-methylsulfonyl-benzylamide;
  - 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (benzo[b]thiophen-3-ylmethyl)-amide; 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 3-methyl-benzylamide;
  - 15 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 3-chloro-benzylamide;
  - 2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid 2-methylsulfonyl-benzylamide;
  - 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-bromo-2-fluoro-benzylamide;
  - 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 2,4-dichloro-benzylamide;
  - 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-chloro-benzylamide;
  - 20 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-chloro-2-methyl-benzylamide;
  - 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2,6-difluoro-4-chloro-benzyl)amide;
  - 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2,4-dichloro-6-fluoro-benzyl)amide;
  - 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (3-fluoro-4-chloro-benzyl)amide;
  - 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2-fluoro-4-chloro-6-methyl-benzyl)amide;
  - 25 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (6-methoxy-pyridin-3-ylmethyl)-amide;
- and the corresponding N-oxides, and their prodrugs; and pharmaceutically acceptable salts and solvates (e.g. hydrates) of such compounds and their N-oxides and prodrugs.

Particular compounds of formula (Ix) of the invention for the inhibition of ITK are:-

- 30 2-(1H-Indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2-piperidin-1-yl-ethyl)-amide, Example 246(ab);
- 2-(1H-Indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (pyridin-2-ylmethyl)-amide, Example 246(ac);
- 2-(1H-Indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid [3-(4-methyl-piperazin-1-yl)-propyl]-amide,
- 35 Example 246(ad);
- N-[2-(1H-Indazol-3-yl)-1H-benzoimidazol-5-yl]-isobutyramide, Example 246(ae)

N-[3-(5,6-Dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-2-piperidin-1-yl-acetamide, Example 253(c)

and the corresponding N-oxides, and their prodrugs; and pharmaceutically acceptable salts and solvates (e.g. hydrates) of such compounds and their N-oxides and prodrugs.

5

The compounds of formula (Ix) of the invention exhibit useful pharmacological activity and accordingly are incorporated into pharmaceutical compositions and used in the treatment of patients suffering from certain medical disorders. The present invention thus provides, according to a further aspect, compounds of formula (Ix) of the invention and compositions containing compounds of

10 formula (Ix) of the invention for use in therapy.

Compounds of formula (Ix) within the scope of the present invention block kinase catalytic activity according to tests described in the literature and *in vitro* procedures described hereinafter, and which tests results are believed to correlate to pharmacological activity in humans and other mammals. Thus,

15 in a further embodiment, the present invention provides compounds of formula (Ix) of the invention and compositions containing compounds of formula (Ix) of the invention for use in the treatment of a patient suffering from, or subject to, conditions which can be ameliorated by the administration of protein kinase inhibitors (e.g. Syk, KDR, tie2 or ITK). For example, compounds of formula (Ix) of the present invention are useful in the treatment of inflammatory diseases, for example asthma: atopic  
20 dermatitis, inflammatory dermatoses (e.g. psoriasis, dermatitis herpetiformis, eczema, necrotizing and cutaneous vasculitis, bullous disease, acute and chronic urticaria,); allergic rhinitis and allergic conjunctivitis; joint inflammation, including arthritis, rheumatoid arthritis and other arthritic conditions such as rheumatoid spondylitis, gouty arthritis, traumatic arthritis, rubella arthritis, psoriatic arthritis and osteoarthritis. The compounds of formula (Ix) are also useful in the treatment of Chronic  
25 Obstructive Pulmonary Disease (COPD), adult respiratory distress syndrome, silicosis, pulmonary sarcoidosis, acute synovitis, autoimmune diabetes, autoimmune encephalomyelitis, colitis, atherosclerosis, peripheral vascular disease, cardiovascular disease, cutaneous and systemic anaphylaxis, endotoxemia, sepsis, septic shock, endotoxic shock, gram negative sepsis, diabetes, multiple sclerosis, restenosis, myocarditis, B cell lymphomas, systemic lupus erythematosus, viral  
30 infections, bacterial infections, parasitic infections, graft v host disease and other transplant associated rejection events, reperfusion injury, Crohn's disease and ulcerative colitis, cancers and tumours (such as colorectal, prostate, breast, thyroid, colon and lung cancers), atherosclerosis, degenerative muscle diseases, obesity, congestive heart failure, Parkinson's, depression, schizophrenia, stroke, head trauma, spinal cord injury, Alzheimer's, neuropathic pain syndrome, amyotrophic lateral sclerosis, cachexia,  
35 osteoporosis, fibrotic diseases of the viscera, and inflammatory bowel disease.

The products of the present patent application as SYK inhibitors may be used for the treatment of diseases chosen from the following: asthma, allergic rhinitis, atopic dermatitis, allergic conjunctivitis, chronic obstructive pulmonary disease, adult respiratory distress syndrome, silicosis, pulmonary sarcoidosis, rheumatoid arthritis, osteoarthritis, rheumatoid spondylitis, gouty arthritis, traumatic arthritis, rubella arthritis, psoriatic arthritis, acute and chronic urticaria, cutaneous and systemic anaphylaxis, endotoxemia, sepsis, septic shock, endotoxic shock, gram negative sepsis, diabetes, multiple sclerosis, systemic lupus erythematosus, viral infections, bacterial infections, parasitic infections, graft vs. host disease, organ transplant rejection, reperfusion injury, Crohn's disease and ulcerative colitis.

10

The products of the present patent application as KDR inhibitors may be used especially for the treatment or prevention of diseases chosen from the following group: cancers, especially breast, colon, lung and prostate cancer, atherosclerosis, degenerative muscle diseases, obesity, congestive heart failure, Parkinson's, depression, schizophrenia, stroke, head trauma, spinal cord injury, Alzheimer's, neuropathic pain syndrome, amyotrophic lateral sclerosis, cachexia, osteoporosis and fibrotic diseases of the viscera.

15

A special embodiment of the therapeutic methods of the present invention is the treating of asthma.

20

Another special embodiment of the therapeutic methods of the present invention is the treating of psoriasis.

Another special embodiment of the therapeutic methods of the present invention is the treating of joint inflammation.

25

Another special embodiment of the therapeutic methods of the present invention is the treating of inflammatory bowel disease.

30

Another special embodiment of the therapeutic methods of the present invention is the treating of cancers and tumours.

35

According to a further feature of the invention there is provided a method for the treatment of a human or animal patient suffering from, or subject to, conditions which can be ameliorated by the administration of a protein kinase inhibitor (e.g. . Syk, KDR, tie2 or ITK) for example conditions as hereinbefore described, which comprises the administration to the patient of an effective amount of compound of the invention or a composition containing a compound of the invention. "Effective

amount" is meant to describe an amount of compound of the present invention effective in inhibiting the catalytic activity a protein kinase, such as. Syk, KDR, tie2 or ITK, and thus producing the desired therapeutic effect.

- 5     References herein to treatment should be understood to include prophylactic therapy as well as treatment of established conditions.

10     The present invention also includes within its scope pharmaceutical compositions comprising at least one of the compounds of formula (Ix) of the invention, as defined above, or a pharmaceutically acceptable salt or a prodrug, in association, where appropriate, with a pharmaceutically acceptable carrier or excipient.

15     Pharmaceutical compositions of the present invention for the treatment of KDR or tie2 associated disease states can also, where appropriate, contain active principles of other antimitotic medicinal products such as, in particular, those based on taxol, cis-platin, DNA-intercalating agents and the like.

20     Compounds of formula (Ix) of the invention may be administered by any suitable means. In practice compounds of formula (Ix) of the present invention may generally be administered parenterally, locally by topical application to the skin and mucous membranes, rectally, orally, by inhalation, or by intravenous or intramuscular injection, especially by the oral route.

25     Compositions according to the invention may be prepared according to the customary methods, using one or more pharmaceutically acceptable adjuvants or excipients. The adjuvants comprise, inter alia, diluents, sterile aqueous media and the various non-toxic organic solvents. The compositions may be presented in the form of tablets, pills, granules, powders, aqueous solutions or suspensions, injectable solutions, elixirs or syrups, and can contain one or more agents chosen from the group comprising sweeteners, flavourings, colourings, or stabilisers in order to obtain pharmaceutically acceptable preparations. The choice of vehicle and the content of active substance in the vehicle are generally determined in accordance with the solubility and chemical properties of the active compound, the particular mode of administration and the provisions to be observed in pharmaceutical practice. For example, excipients such as lactose, sodium citrate, calcium carbonate, dicalcium phosphate and disintegrating agents such as starch, alginic acids and certain complex silicates combined with lubricants such as magnesium stearate, sodium lauryl sulfate and talc may be used for preparing tablets. To prepare a capsule, it is advantageous to use lactose and high molecular weight polyethylene glycols.

35     When aqueous suspensions are used they can contain emulsifying agents or agents which facilitate

suspension. Diluents such as sucrose, ethanol, polyethylene glycol, propylene glycol, glycerol and chloroform or mixtures thereof may also be used.

5 For parenteral administration, emulsions, suspensions or solutions of the products according to the invention in vegetable oil, for example sesame oil, groundnut oil or olive oil, or aqueous-organic solutions such as water and propylene glycol, injectable organic esters such as ethyl oleate, as well as sterile aqueous solutions of the pharmaceutically acceptable salts, are used. The solutions of the salts of the products according to the invention are especially useful for administration by intramuscular or subcutaneous injection. The aqueous solutions, also comprising solutions of the salts in pure distilled  
10 water, may be used for intravenous administration with the proviso that their pH is suitably adjusted, that they are judiciously buffered and rendered isotonic with a sufficient quantity of glucose or sodium chloride and that they are sterilised by heating, irradiation or microfiltration.

For topical administration, gels (water or alcohol based), creams or ointments containing compounds of formula (Ix) of the invention may be used. Compounds of formula (Ix) of the invention may also be  
15 incorporated in a gel or matrix base for application in a patch, which would allow a controlled release of compound through the transdermal barrier.

For administration by inhalation compounds of formula (Ix) of the invention may be dissolved or  
20 suspended in a suitable carrier for use in a nebuliser or a suspension or solution aerosol, or may be absorbed or adsorbed onto a suitable solid carrier for use in a dry powder inhaler.

Solid compositions for rectal administration include suppositories formulated in accordance with known methods and containing at least one compound of the invention.

25 The percentage of active ingredient in the compositions of the invention may be varied, it being necessary that it should constitute a proportion such that a suitable dosage shall be obtained. Obviously, several unit dosage forms may be administered at about the same time. The dose employed will be determined by the physician, and depends upon the desired therapeutic effect, the route of administration and the duration of the treatment, and the condition of the patient. In the adult, the  
30 doses are generally from about 0.001 to about 50, preferably about 0.001 to about 5, mg/kg body weight per day by inhalation, from about 0.01 to about 100, preferably 0.1 to 70, more especially 0.5 to 10, mg/kg body weight per day by oral administration, and from about 0.001 to about 10, preferably 0.01 to 1, mg/kg body weight per day by intravenous administration. In each particular case, the doses  
35 will be determined in accordance with the factors distinctive to the subject to be treated, such as age,

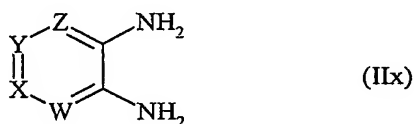
weight, general state of health and other characteristics which can influence the efficacy of the medicinal product.

The compounds of formula (Ix) according to the invention may be administered as frequently as necessary in order to obtain the desired therapeutic effect. Some patients may respond rapidly to a higher or lower dose and may find much weaker maintenance doses adequate. For other patients, it may be necessary to have long-term treatments at the rate of 1 to 4 doses per day, in accordance with the physiological requirements of each particular patient. Generally, the active product may be administered orally 1 to 4 times per day. Of course, for some patients, it will be necessary to prescribe not more than one or two doses per day.

Compounds of formula (Ix) of the invention may be prepared by the application or adaptation of known methods, by which is meant methods used heretofore or described in the literature, for example those described by R.C.Larock in Comprehensive Organic Transformations, VCH publishers, 1989.

In the reactions described hereinafter it may be necessary to protect reactive functional groups, for example hydroxy, amino, imino, thio or carboxy groups, where these are desired in the final product, to avoid their unwanted participation in the reactions. Conventional protecting groups may be used in accordance with standard practice, for examples see T.W. Greene and P.G.M. Wuts in "Protective Groups in Organic Chemistry" John Wiley and Sons, 1991.

Compounds of formula (Ix) wherein W, X, Y, Z and  $R^1$  are as hereinbefore defined for compounds of formula (Ix) and  $A_5$  is H, may be prepared by reaction of compounds of formula (IIx):-



in which W, X, Y and Z are as hereinbefore defined for compounds of formula (Ix), with acids of formula (IIIx):-



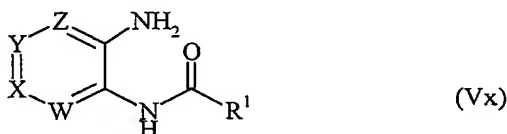
in which  $R^1$  is as hereinbefore defined for compounds of formula (Ix), at a temperature at about 160°C. Alternatively the reaction may (i) be carried in the presence of hydrochloric acid at about reflux

temperature, or polyphosphoric acid at a temperature at about 160°C or (ii) be carried out in a microwave oven.

- Compounds of formula (Ix) wherein W, X, Y, Z and R<sup>1</sup> are as hereinbefore defined and A<sub>5</sub> is H, may be prepared by reaction of compounds of formula (IIx) in which W, X, Y and Z are as hereinbefore defined for compounds of formula (Ix), with aldehydes of formula (IVx):-

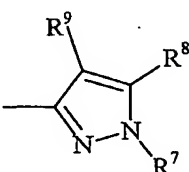


- 10 in which R<sup>1</sup> is as hereinbefore defined for compounds of formula (Ix), in the presence of an inert solvent, such as dimethylformamide or nitrobenzene, and at a temperature up to about 145°C. Alternatively the reaction may (i) be carried in the presence of sodium bisulfite at a temperature at about reflux temperature or (ii) be carried out in a microwave oven at a temperature up to about 200°C.
- 15 Compounds of formula (Ix) wherein W, X, Y, Z and R<sup>1</sup> are as hereinbefore defined for compounds of formula (Ix) and A<sub>5</sub> is H, may be prepared by cyclisation of compounds of formula (Vx):-



- 20 wherein W, X, Y, Z and R<sup>1</sup> are as hereinbefore defined for compounds of formula (Ix). The cyclisation may be carried out by heating in the presence of an acid catalyst, such as acetic acid, and at a temperature up to about 120°C.

Compounds of formula (Ixa) wherein W, X, Y and Z are as hereinbefore defined for compounds of

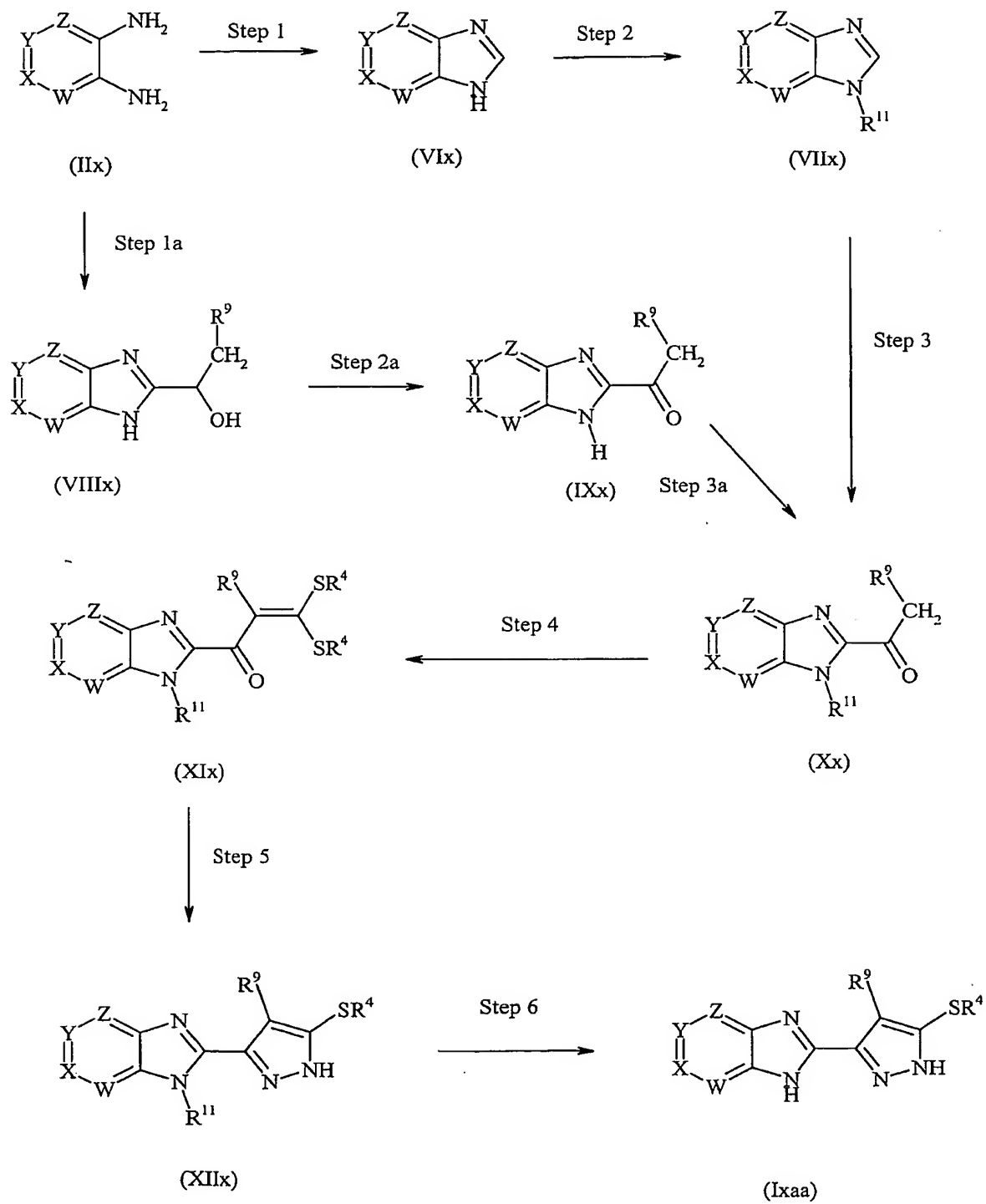
- 25 formula (Ix) and R<sup>1</sup> is , in which R<sup>9</sup> is as hereinbefore defined for compounds of

formula (Ix), R<sup>7</sup> is hydrogen and R<sup>8</sup> is SR<sup>4</sup>, i.e. compounds of formula (Ixaa), may be prepared as shown in scheme 1.



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Scheme 1

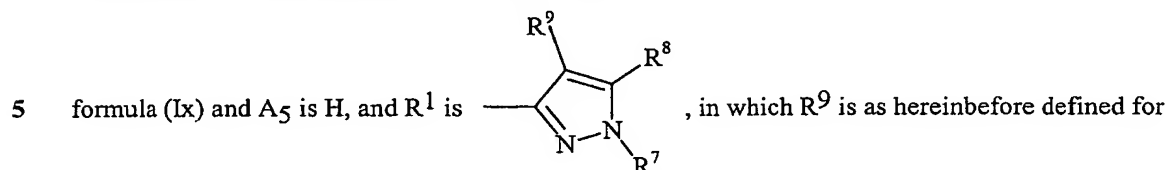


For example diamines of formula (IIx), wherein W, X, Y and Z are as hereinbefore defined for compounds of formula (Ix), may be treated, in Step 1, with formic acid in the presence of hydrochloric acid at a temperature at about 50°C. The imino group of the resulting compounds of formula (VIx) wherein W, X, Y and Z are as hereinbefore defined for compounds of formula (Ix), may then be protected, in Step 2, with a suitable protecting group, for example when this is a 2-(trimethylsilyl)ethoxymethyl group the protection is conveniently carried out by (i) reaction with sodium hydride in dimethylformamide then (ii) reaction with 2-(trimethylsilyl)ethoxymethyl chloride. The resulting compounds of formula (VIIx), wherein W, X, Y and Z are as hereinbefore defined for compounds of formula (Ix) and R<sup>11</sup> is a suitable protecting group, such as a 2-(trimethylsilyl)ethoxymethyl group, may then be treated, in Step 3, with (i) lithium diisopropylamide, in an inert solvent, such as tetrahydrofuran, and at a temperature at about -78°C, then (ii) acetamides of formula R<sup>9</sup>-C(=O)-N(CH<sub>3</sub>)<sub>2</sub> [in which R<sup>9</sup> is as hereinbefore defined for compounds of formula (Ix)]. The resulting compounds of formula (Xx), wherein W, X, Y, Z, R<sup>9</sup> and R<sup>11</sup> are as hereinbefore defined for compounds of formula (Ix), [alternatively prepared by (i) reaction of diamines of formula (IIx) with β-hydroxy-acids of formula R<sup>9</sup>CH<sub>2</sub>CH(OH)CO<sub>2</sub>H [in which R<sup>9</sup> is as hereinbefore defined for compounds of formula (Ix)], in Step 1a, at a temperature at about 70°C, (ii) oxidation, in Step 2a, of the resulting compounds of formula (VIIIx) with manganese dioxide in an inert solvent, such as chloroform, and at a temperature at about 60°C and (iii) protection of the imino group, in Step 3a, as described in Step 2 above)] may then be treated, in Step 4, with (i) sodium tertiary butoxide, in an inert solvent, such as benzene or tetrahydrofuran, at -5°C, then (ii) carbon disulfide and then (iii) compounds of formula R<sup>4</sup>-X<sup>1</sup> [in which R<sup>4</sup> is as hereinbefore defined for compounds of formula (Ix)] and X<sup>1</sup> is halo. The resulting compounds of formula (XIx), wherein W, X, Y, Z, R<sup>4</sup>, R<sup>9</sup> and R<sup>11</sup> are as hereinbefore defined for compounds of formula (Ix), may then be treated, in Step 5, with hydrazine, in an inert solvent, such as ethanol, and at a temperature from about room temperature to about reflux temperature. The resulting compounds of formula (XIIx), wherein W, X, Y, Z, R<sup>4</sup>, R<sup>9</sup> and R<sup>11</sup> are as hereinbefore defined for compounds of formula (Ix), may then be deprotected {for example when R<sup>11</sup> is a 2-(trimethylsilyl)ethoxymethyl group by treatment with hydrochloric acid in an inert solvent, such as ethanol, and at a temperature from about room temperature to about reflux temperature}, in Step 6, to liberate the pyrazoles of general formula (Ixaa), wherein W, X, Y, Z, R<sup>4</sup> and R<sup>9</sup> are as hereinbefore defined for compounds of formula (Ix). Compounds of formula (XIx) in which R<sup>11</sup> is a tetrahydropyran-2-yl protecting group may be deprotected by treatment with an acid, such as p-toluenesulfonic acid, in water at reflux temperature and subsequently treated with hydrazine, in an inert solvent, such as ethanol, and at a temperature from about room temperature to about reflux

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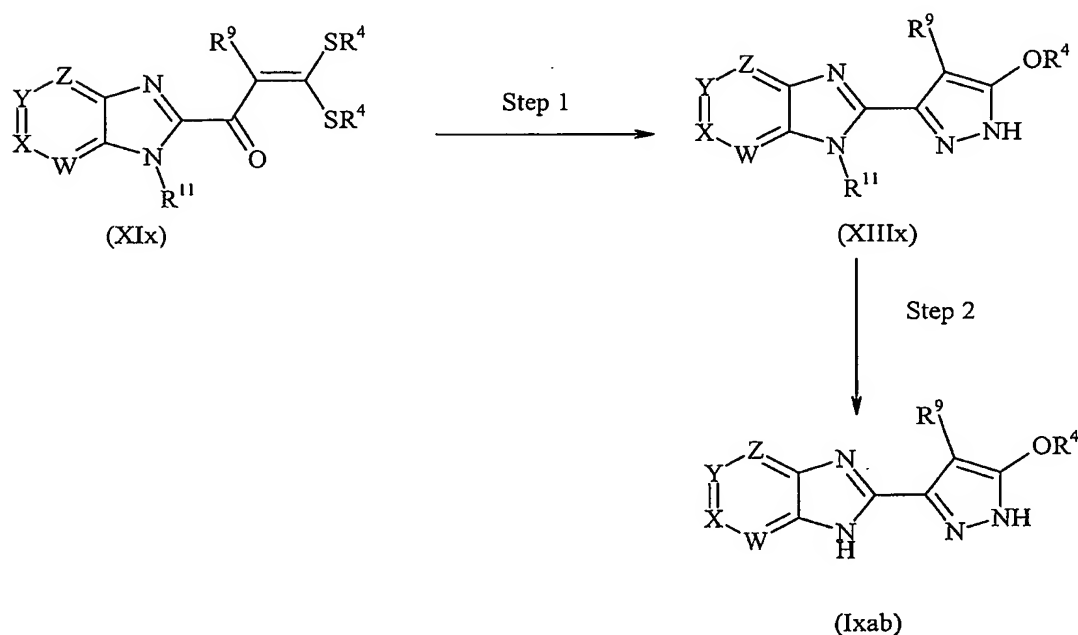
temperature to give pyrazoles of general formula (Ixaa), wherein W, X, Y, Z, R<sup>4</sup> and R<sup>9</sup> are as hereinbefore defined for compounds of formula (Ix).

Compounds of formula (Ix) wherein W, X, Y and Z are as hereinbefore defined for compounds of



compounds of formula (Ix), R<sup>7</sup> is hydrogen and R<sup>8</sup> is OR<sup>4</sup>, i.e. compounds of formula (Ixab), may be prepared as shown in scheme 2.

Scheme 2

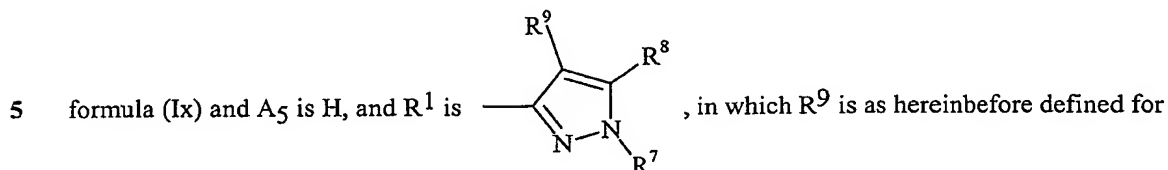


- 10 For example compounds of formula (XIx), wherein W, X, Y, Z, R<sup>9</sup>, R<sup>11</sup> are as hereinbefore defined for compounds of formula (Ix), and R<sup>4</sup> is lower alkyl, may be treated, in Step 1, with the sodium salt of an alcohol of formula R<sup>4</sup>-OH (in which R<sup>4</sup> is lower alkyl), such as sodium ethoxide, followed by treatment with hydrazine as described hereinabove for scheme 1. The resulting compounds of formula (XIIIx), wherein W, X, Y, Z, R<sup>4</sup>, R<sup>9</sup> and R<sup>11</sup> are as hereinbefore defined for compounds of formula
- 15 (Ix), may then be deprotected [for example when R<sup>11</sup> is a 2-(trimethylsilyl)ethoxymethyl group by

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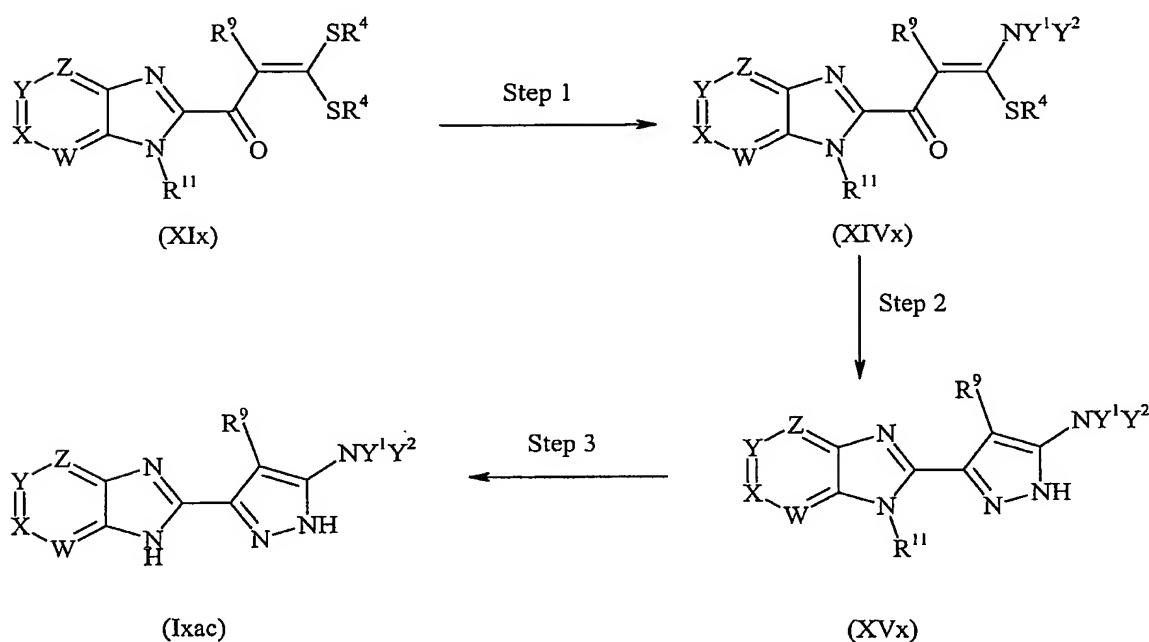
treatment with trifluoroacetic acid at about 50°C], in Step 2, to liberate the pyrazoles of general formula (Ixab).

Compounds of formula (Ix) wherein W, X, Y and Z are as hereinbefore defined for compounds of



compounds of formula (Ix), R<sup>7</sup> is hydrogen and R<sup>8</sup> is -NY<sup>1</sup>Y<sup>2</sup>, i.e. compounds of formula (Ixac), may be prepared as shown in scheme 3.

Scheme 3



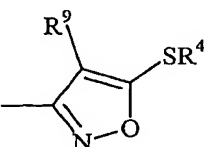
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For example compounds of formula (XIx), wherein W, X, Y, Z, R<sup>9</sup> and R<sup>11</sup> are as hereinbefore defined for compounds of formula (Ix), and R<sup>4</sup> is lower alkyl, may be treated, in Step 1, with an amine of formula HNY<sup>1</sup>Y<sup>2</sup> [in which Y<sup>1</sup> and Y<sup>2</sup> are as hereinbefore defined for compounds of formula (Ix)], e.g. morpholine. The resulting compounds of formula (XIVx), wherein W, X, Y, Z, R<sup>9</sup>, R<sup>11</sup>, Y<sup>1</sup> and Y<sup>2</sup> are as hereinbefore defined for compounds of formula (Ix), and R<sup>4</sup> is lower alkyl, may then be treated, in step 2, with hydrazine as described hereinabove for scheme 1. The resulting compounds of

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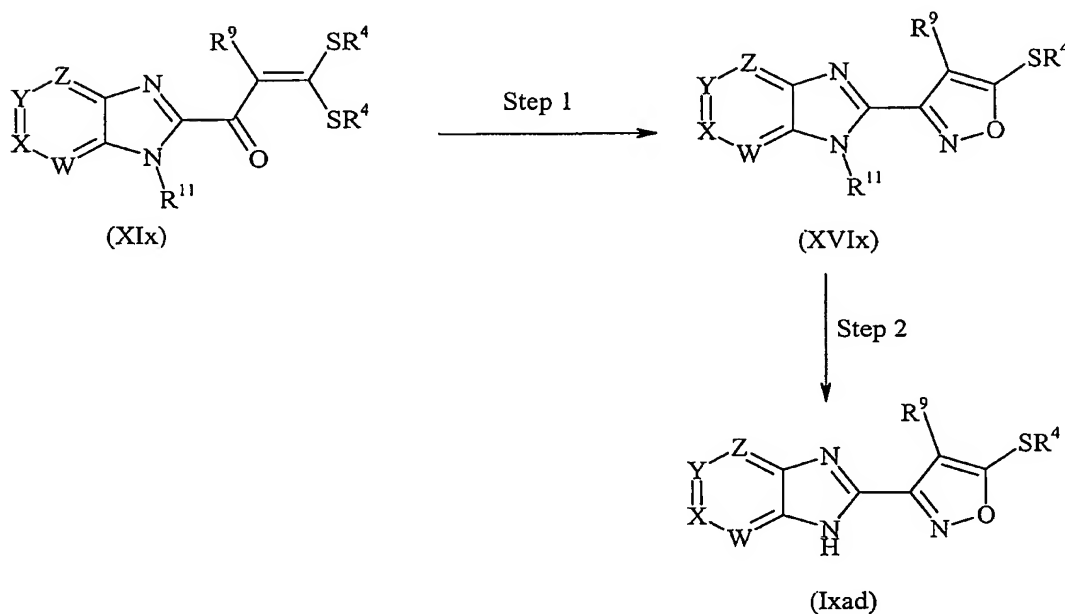
formula (XVx), wherein W, X, Y, Z, R<sup>9</sup>, R<sup>11</sup>, Y<sup>1</sup> and Y<sup>2</sup> are as hereinbefore defined for compounds of formula (Ix), may then be deprotected as described hereinabove, in Step 3, to liberate the pyrazoles of general formula (Ixac).

- 5 Compounds of formula (Ix) wherein W, X, Y and Z are as hereinbefore defined for compounds of

formula (Ix) and A<sub>5</sub> is H, and R<sup>1</sup> is , i.e. compounds of formula (Ixad), may be

prepared as shown in scheme 4.

Scheme 4



10

For example compounds of formula (XIx), wherein W, X, Y, Z, R<sup>9</sup> and R<sup>11</sup> are as hereinbefore defined for compounds of formula (Ix), and R<sup>4</sup> is lower alkyl, may be treated, in Step 1, with hydroxylamine in the presence of sodium methoxide and in methanol at reflux temperature. The resulting compounds of formula (XVIx), wherein W, X, Y, Z, R<sup>4</sup>, R<sup>9</sup> and R<sup>11</sup> are as hereinbefore

- 15 defined for compounds of formula (Ix), may then be deprotected as described hereinabove, in Step 2, to liberate the isoxazoles of general formula (Ixad).

Compounds of the invention of formula (Ix) may also be prepared by interconversion of other compounds of the invention.

Thus, for example, compounds of formula (Ix) containing a carboxy group may be prepared by  
5 hydrolysis of the corresponding esters. The hydrolysis may conveniently be carried out by alkaline hydrolysis using a base, such as an alkali metal hydroxide, e.g. lithium hydroxide, or an alkali metal carbonate, e.g. potassium carbonate, in the presence of an aqueous/organic solvent mixture, using organic solvents such as dioxan, tetrahydrofuran or methanol, at a temperature from about ambient to about reflux. The hydrolysis of the esters may also be carried out by acid hydrolysis using an inorganic  
10 acid, such as hydrochloric acid, in the presence of an aqueous/inert organic solvent mixture, using organic solvents such as dioxan or tetrahydrofuran, at a temperature from about 50°C to about 80°C.

As another example compounds of formula (Ix) containing a carboxy group may be prepared by acid catalysed removal of the *tert*-butyl group of the corresponding *tert*-butyl esters using standard reaction  
15 conditions, for example reaction with trifluoroacetic acid at a temperature at about room temperature.

As another example compounds of formula (Ix) containing a carboxy group may be prepared by hydrogenation of the corresponding benzyl esters. The reaction may be carried out in the presence of ammonium formate and a suitable metal catalyst, e.g. palladium, supported on an inert carrier such as  
20 carbon, preferably in a solvent such as methanol or ethanol and at a temperature at about reflux temperature. The reaction may alternatively be carried out in the presence of a suitable metal catalyst, e.g. platinum or palladium optionally supported on an inert carrier such as carbon, preferably in a solvent such as methanol or ethanol.

25 As another example compounds of formula (Ix) containing a carboxy group may be prepared by treatment of compounds of formula I(x) containing a cyano group with hydrochloric acid in acetic acid at a temperature at about 100°C.

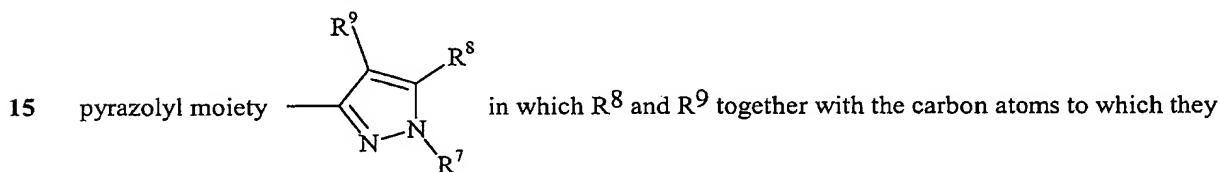
As another example of the interconversion process, compounds of formula (Ix) containing a  
30  $-C(=O)-NY^1Y^2$  group may be prepared by reaction of compounds of formula (Ix) containing a carboxy group with an amine of formula  $HNY^1Y^2$  to give an amide bond using standard peptide coupling procedures, for example coupling in the presence of 1-(3-dimethylaminopropyl)-3-ethylcarbodiimide, hydroxybenzotriazole and di-isopropylethylamine in an inert solvent, such as dimethylformamide and a temperature up to about 80°C. The reaction may alternatively be carried out in the presence of  
35 O-(7-azabenzotriazol-1-yl)-1,1,3,3-tetramethyluronium hexafluorophosphate and triethylamine (or diisopropylethylamine) in tetrahydrofuran (or dimethylformamide) at room temperature.

As another example of the interconversion process, compounds of formula (Ix) containing a -NH-C(=O)-R<sup>4</sup> group may be prepared by: (i) coupling compounds of formula (Ix) containing an amino group with acids of formula R<sup>4</sup>-CO<sub>2</sub>H using standard coupling conditions as described above;

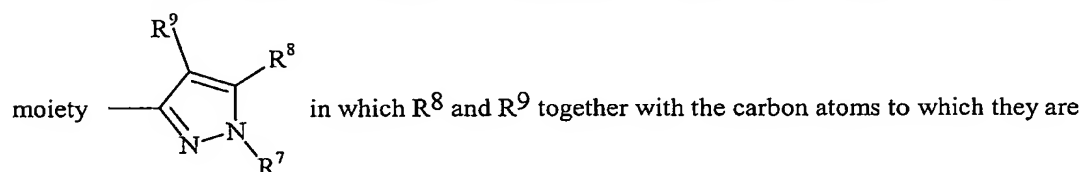
5 or (ii) by reaction of compounds of formula (Ix) containing an amino group with acid chlorides of formula R<sup>4</sup>-C(=O)-Cl in the presence of a tertiary base, such as di-isopropylethylamine, in an inert solvent, such as dichloromethane, and at a temperature at about room temperature. In some instances a bis-acylated derivative is obtained by reaction of compounds of formula (Ix) containing an amino group and in which A<sub>5</sub> is H, with acid chlorides of formula R<sup>4</sup>-C(=O)-Cl. These bis-acylated

10 derivatives may be converted to compounds of formula (Ix) containing a -NH-C(=O)-R<sup>4</sup> group and in which A<sub>5</sub> is H, by treatment with potassium hydroxide in aqueous methanol at a temperature at about 60°C.

As another example of the interconversion process, compounds of formula (Ix) wherein R<sup>1</sup> is a



are attached form a 5 or 6 membered heterocyclic ring containing a NY<sup>5</sup> group (where Y<sup>5</sup> is -C(=O)R<sup>4</sup>) may be prepared by reaction of compounds of formula (Ix) wherein R<sup>1</sup> is a pyrazolyl

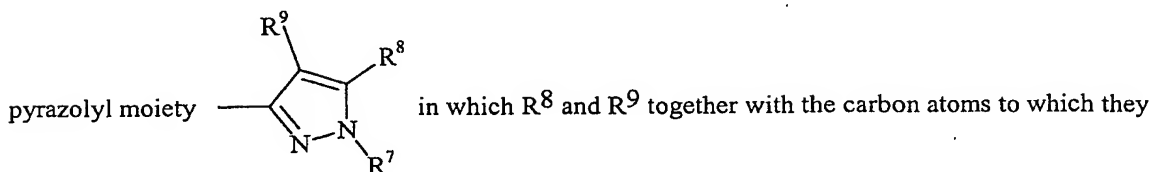


attached form a 5 or 6 membered heterocyclic ring containing a NY<sup>5</sup> group (where Y<sup>5</sup> is hydrogen)

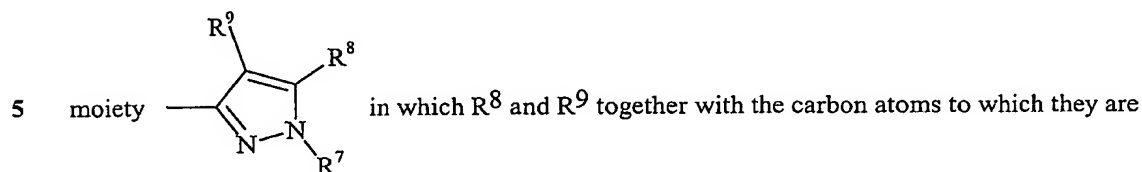
20 with acid chlorides of formula R<sup>4</sup>-C(=O)-Cl in the presence of a tertiary base, such as di-isopropylethylamine, in an inert solvent, such as dichloromethane, and at a temperature at about room temperature.

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As another example of the interconversion process, compounds of formula (Ix) wherein  $R^1$  is a



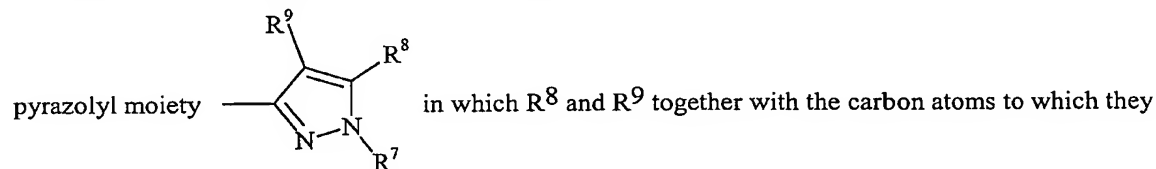
are attached form a 5 or 6 membered heterocyclic ring containing a  $NY^5$  group (where  $Y^5$  is  $-C(=O)NY^1Y^2$ ) may be prepared by reaction of compounds of formula (Ix) wherein  $R^1$  is a pyrazolyl



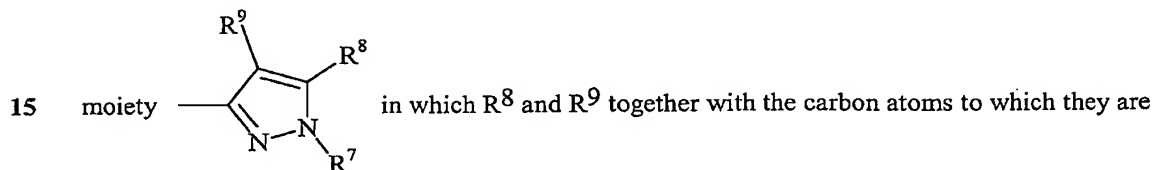
attached form a 5 or 6 membered heterocyclic ring containing a  $NY^5$  group (where  $Y^5$  is hydrogen) with carbamoyl chlorides of formula  $Y^1Y^2N-C(=O)-Cl$  in the presence of a tertiary base, such as diisopropylethylamine, in an inert solvent, such a dichloromethane, and at a temperature at about room temperature.

10

As another example of the interconversion process, compounds of formula (Ix) wherein  $R^1$  is a



are attached form a 5 or 6 membered heterocyclic ring containing a  $NY^5$  group (where  $Y^5$  is  $-C(=O)OR^4$ ) may be prepared by reaction of compounds of formula (Ix) wherein  $R^1$  is a pyrazolyl



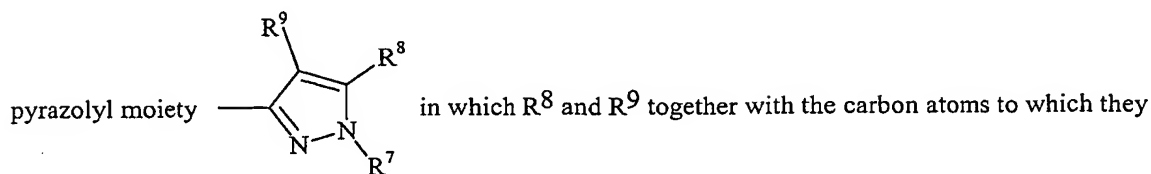
attached form a 5 or 6 membered heterocyclic ring containing a  $NY^5$  group (where  $Y^5$  is hydrogen) with chloroformates of formula  $R^4O-C(=O)-Cl$  in the presence of a tertiary base, such as diisopropylethylamine, in an inert solvent, such a dichloromethane, and at a temperature at about room temperature.

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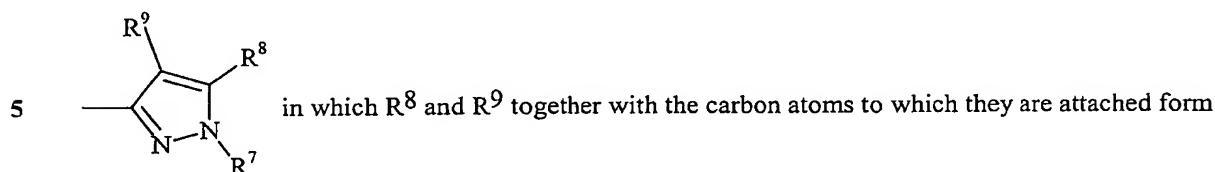


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As another example of the interconversion process, compounds of formula (Ix) wherein R<sup>1</sup> is a



are attached form a 5 or 6 membered heterocyclic ring containing a NY<sup>5</sup> group (where Y<sup>5</sup> is -SO<sub>2</sub>R<sup>4</sup>) may be prepared by reaction of compounds of formula (Ix) wherein R<sup>1</sup> is a pyrazolyl moiety



a 5 or 6 membered heterocyclic ring containing a NY<sup>5</sup> group (where Y<sup>5</sup> is hydrogen) with sulfonyl chlorides of formula R<sup>4</sup>SO<sub>2</sub>-Cl in the presence of a tertiary base, such as diisopropylethylamine, in an inert solvent, such a dichloromethane, and at a temperature at about room temperature.

- 10 As another example of the interconversion process, compounds of formula (Ix) containing a -NH-C(=O)-R<sup>4</sup> group, in which R<sup>4</sup> is alkyl substituted by NY<sup>1</sup>Y<sup>2</sup>, may be prepared by (i) coupling compounds of formula (Ix) containing an amino group with the appropriate chloroalkyl acid chloride, in the presence of a tertiary base, such as di-isopropylethylamine, in an inert solvent, such a dichloromethane, and at a temperature at about room temperature, followed by (ii) reaction with an
- 15 amine of formula HNY<sup>1</sup>Y<sup>2</sup>.

As another example of the interconversion process, compounds of formula (Ix) containing a -N(R<sup>6</sup>)C(=O)NY<sup>1</sup>Y<sup>2</sup> group [in which R<sup>6</sup> is hydrogen, Y<sup>1</sup> is hydrogen and Y<sup>2</sup> is alkenyl, aryl, cycloalkyl, heteroaryl, or optionally substituted alkyl] may be prepared by reaction of compounds of

20 formula (Ix) containing an amino group with isocyanates of formula Y<sup>2</sup>N=C=O [in which Y<sup>2</sup> is alkenyl, aryl, cycloalkyl, heteroaryl, or optionally substituted alkyl], in an inert solvent, such as tetrahydrofuran, and at a temperature at about room temperature.

- As another example of the interconversion process, compounds of formula (Ix) containing a
- 25 -N(R<sup>6</sup>)C(=O)NY<sup>1</sup>Y<sup>2</sup> group [in which R<sup>6</sup> is hydrogen] may be prepared by reaction of compounds of formula (Ix) containing an amino group with 1,1-carbonyldiimidazole in an inert solvent such as

tetrahydrofuran and at a temperature at about 60°C followed by reaction with an amine of formula  $\text{HNY}^1\text{Y}^2$ .

5 As another example of the interconversion process, compounds of formula (Ix) containing an amino group may be prepared by reduction of the corresponding compounds of formula (Ix) containing a nitro group. For example, the reduction may conveniently be carried out by hydrogenation in the presence of a suitable metal catalyst, e.g. platinum or palladium optionally supported on an inert carrier such as carbon, preferably in a solvent such as methanol or ethanol. The reduction may also conveniently be carried out by means of reaction with tin chloride, in an inert solvent, such as methanol or ethanol, and  
10 at a temperature at about reflux temperature. Alternatively the reaction with tin chloride may be carried out in a microwave oven at a temperature at about 140°C.

As another example of the interconversion process, compounds of formula (Ix) containing a  $-\text{CH}_2\text{OH}$  group may be prepared by the reduction of corresponding compounds of formula (Ix) containing a  
15  $-\text{CHO}$  or  $-\text{CO}_2$  lower alkyl group. For example, the reduction may conveniently be carried out by means of reaction with lithium aluminium hydride, in an inert solvent, such as tetrahydrofuran, and at a temperature from about room temperature to about reflux temperature.

As another example of the interconversion process, compounds of formula (Ix) containing a  
20  $-\text{CH}(\text{OH})\text{R}^4$  group may be prepared by treating compounds of formula (Ix) containing a  $-\text{C}(=\text{O})\text{R}^4$  group with diisobutylaluminium hydride, in an inert solvent, such as tetrahydrofuran, and at a temperature from about  $-78^\circ\text{C}$  to about room temperature.

As another example of the interconversion process, compounds of formula (Ix) in which  $\text{R}^1$  is aryl or  
25 heteroaryl substituted by hydroxy may be prepared by reaction of the corresponding compounds of formula (Ix) in which  $\text{R}^1$  is aryl or heteroaryl substituted by methoxy with a Lewis acid, such as boron tribromide, in an inert solvent, such as dichloromethane, and at a temperature from about  $0^\circ\text{C}$  to about room temperature.

30 As another example of the interconversion process, compounds of formula (Ix) containing sulfoxide linkages may be prepared by the oxidation of corresponding compounds containing  $-\text{S}-$  linkages. For example, the oxidation may conveniently be carried out by means of reaction with a peroxyacid, e.g. 3-chloroperbenzoic acid, preferably in an inert solvent, e.g. dichloromethane, preferably at or near room temperature, or alternatively by means of potassium hydrogen peroxomonosulfate in a medium

such as aqueous methanol, buffered to about pH 5, at temperatures between about 0°C and room temperature. This latter method is preferred for compounds containing an acid-labile group.

5 As another example of the interconversion process, compounds of formula (Ix) containing sulfone linkages may be prepared by the oxidation of corresponding compounds containing -S- or sulfoxide linkages. For example, the oxidation may conveniently be carried out by means of reaction with a peroxyacid, e.g. 3-chloroperbenzoic acid, preferably in an inert solvent, e.g. dichloromethane, preferably at or near room temperature.

10 As another example of the interconversion process, compounds of formula (Ix) containing a cyano group may be prepared by reaction of the corresponding compounds of formula (Ix) containing a -C(=O)-NH<sub>2</sub> group with phosphorus pentachloride in the presence of triethylamine. The reaction may conveniently be carried out in an inert solvent, such as tetrahydrofuran, and at a temperature at about reflux temperature.

15 As another example of the interconversion process, compounds of formula (Ix) containing a -C(=O)-NH<sub>2</sub> group may be prepared by reaction of the corresponding compounds of formula (Ix) containing a cyano group with hydrogen peroxide in the presence of sodium hydroxide. The reaction may conveniently be carried out in methanol at a temperature at about room temperature. Alternatively  
20 compounds of formula (Ix) containing a -C(=O)-NH<sub>2</sub> group may be prepared by reaction of the corresponding compounds of formula (Ix) containing a cyano group with hydrochloric acid in acetic acid at a temperature from about 80°C to about 100°C.

25 As another example of the interconversion process, compounds of formula (Ix) containing a tetrazolyl group may be prepared by reaction of the corresponding compounds of formula (Ix) containing a cyano group with azidotributyltin. The reaction may conveniently be carried out in an inert solvent, such as toluene, and at a temperature at about reflux temperature.

30 According to a further feature of the invention, acid addition salts of the compounds of this invention may be prepared by reaction of the free base with the appropriate acid, by the application or adaptation of known methods. For example, the acid addition salts of the compounds of this invention may be prepared either by dissolving the free base in water or aqueous alcohol solution or other suitable solvents containing the appropriate acid and isolating the salt by evaporating the solution, or by  
35 reacting the free base and acid in an organic solvent, in which case the salt separates directly or can be obtained by concentration of the solution.

Compounds of this invention can be regenerated from their acid addition salts by the application or adaptation of known methods. For example, parent compounds of the invention can be regenerated from their acid addition salts by treatment with an alkali, e.g. aqueous sodium bicarbonate solution or aqueous ammonia solution.

5

According to a further feature of the invention, base addition salts of the compounds of this invention may be prepared by reaction of the free acid with the appropriate base, by the application or adaptation of known methods. For example, the base addition salts of the compounds of this invention may be prepared either by dissolving the free acid in water or aqueous alcohol solution or other suitable  
10 solvents containing the appropriate base and isolating the salt by evaporating the solution, or by reacting the free acid and base in an organic solvent, in which case the salt separates directly or can be obtained by concentration of the solution.

15

Compounds of this invention can be regenerated from their base addition salts by the application or adaptation of known methods. For example, parent compounds of the invention can be regenerated from their base addition salts by treatment with an acid, e.g. hydrochloric acid.

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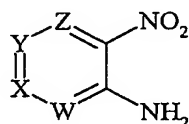
Compounds of the present invention may be conveniently prepared, or formed during the process of the invention, as solvates (e.g. hydrates). Hydrates of compounds of the present invention may be conveniently prepared by recrystallisation from an aqueous/organic solvent mixture, using organic solvents such as dioxan, tetrahydrofuran or methanol.

25

The starting materials and intermediates may be prepared by the application or adaptation of known methods, for example methods as described in the Reference Examples or their obvious chemical equivalents.

Intermediates of formula (IIx), wherein W, X, Y and Z are as hereinbefore defined for compounds of formula (Ix), may be prepared by reduction of the corresponding nitro compounds of formula (1):

30



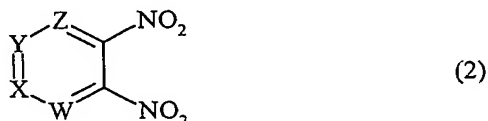
(1)

wherein W, X, Y and Z are as hereinbefore defined for compounds of formula (Ix). For example, the reduction may conveniently be carried out by means of reaction with tin chloride, in an inert solvent,

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such as methanol or ethanol, and at a temperature at about reflux temperature. Alternatively the reaction may be carried out in a microwave oven at a temperature at about 140°C.

- Intermediates of formula (IIx), wherein W, X, Y and Z are as hereinbefore defined for compounds of formula (Ix), may also be prepared by reduction of the corresponding dinitro compounds of formula (2):



- 10 wherein W, X, Y and Z are as hereinbefore defined for compounds of formula (Ix), with tin chloride as above.

Nitro compounds of formula (1), wherein W is CH, X is C-R<sup>2</sup>, Y is C-R<sup>3</sup> and Z is CH [in which R<sup>3</sup> is as hereinbefore defined for compounds of formula (Ix)], may be prepared from the corresponding

- 15 anilines of formula (3)

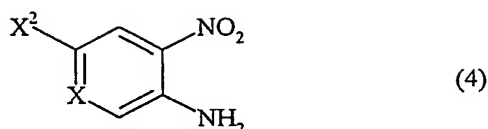


- 20 wherein X is C-R<sup>2</sup> and Y is C-R<sup>3</sup> [in which R<sup>3</sup> is as hereinbefore defined for compounds of formula (Ix)], by (i) reaction with acetic anhydride in the presence of triethylamine, in an inert solvent, such as dichloromethane, and at a temperature from about 0°C to about room temperature, (ii) reaction with nitric acid in the presence of acetic acid and acetic anhydride at a temperature at about -5°C and (iii) reaction with an alkali metal alkoxide, such as sodium methoxide, in methanol and at room temperature.

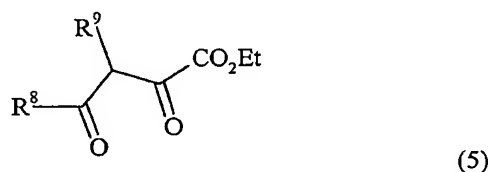
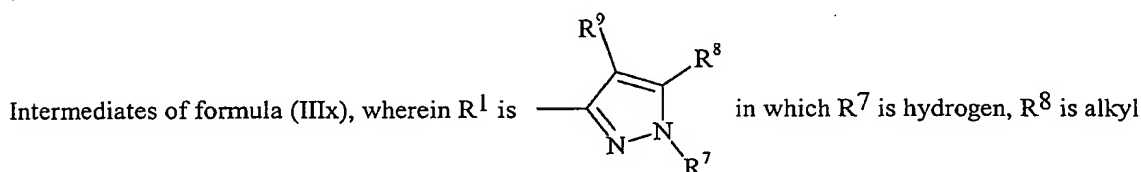
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Nitro compounds of formula (1), wherein W is CH, X is C-R<sup>2</sup> (in which R<sup>2</sup> is alkyl), Y is C-R<sup>3</sup> (in which R<sup>3</sup> is an aryl or heteroaryl group) and Z is CH may be prepared by reaction of compounds of formula (4):

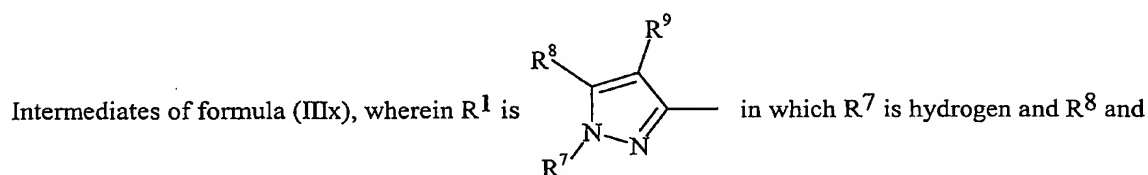
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wherein X is C-R<sup>2</sup> (in which R<sup>2</sup> is alkyl) and X<sup>2</sup> is bromo or iodo, with an aryl (or heteroaryl) boronic acid in the presence of a suitable catalyst, such as tetrakis(triphenylphosphine)palladium, in an inert solvent, such as tetrahydrofuran, and at a temperature at about 85°C.

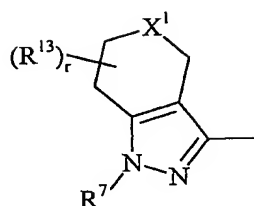


wherein R<sup>8</sup> is alkyl and R<sup>9</sup> is hydrogen, with hydrazine in the presence of acetic acid at reflux temperature, followed by hydrolysis.



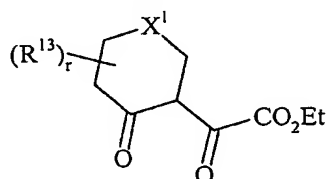
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Intermediates of formula (IIIx), wherein R<sup>1</sup> is



in which R<sup>7</sup> is hydrogen, R<sup>13</sup> is

alkyl and X<sup>1</sup> is O, S, SO<sub>2</sub>, or NY<sup>5</sup> (where Y<sup>5</sup> is R<sup>4</sup>, -C(=O)R<sup>4</sup>, -C(=O)NY<sup>1</sup>Y<sup>2</sup>, -C(=O)OR<sup>4</sup> or -SO<sub>2</sub>R<sup>4</sup>) may be similarly prepared by reaction of compounds of formula (6):

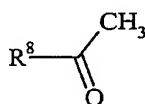


(6)

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wherein R<sup>13</sup> is alkyl and X<sup>1</sup> is O, S, SO<sub>2</sub>, or NY<sup>5</sup> (where Y<sup>5</sup> is R<sup>4</sup>, -C(=O)R<sup>4</sup>, -C(=O)NY<sup>1</sup>Y<sup>2</sup>, -C(=O)OR<sup>4</sup> or -SO<sub>2</sub>R<sup>4</sup>), with hydrazine, followed by hydrolysis.

Compounds of formula (5), wherein R<sup>8</sup> is alkyl and R<sup>9</sup> is hydrogen, may be prepared by reaction of  
10 compounds of formula (7):



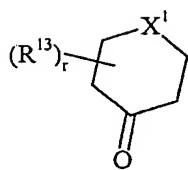
(7)

wherein R<sup>8</sup> is alkyl, with diethyl oxalate, in the presence of an alkali metal alkoxide, such as sodium  
15 ethoxide, in an inert solvent, such as ethanol, and at a temperature at about 60°C.

Compounds of formula (5), wherein R<sup>8</sup> and R<sup>9</sup> together with the carbon atoms to which they are  
20 attached form a 5, 6 or 7 membered carbocyclic ring may be similarly prepared by reaction of cyclopentanone, or cyclohexanone, with diethyl oxalate.

Compounds of formula (6), wherein R<sup>13</sup> is alkyl and X<sup>1</sup> is O, S, SO<sub>2</sub>, or NY<sup>5</sup> (where Y<sup>5</sup> is R<sup>4</sup>,  
-C(=O)R<sup>4</sup>, -C(=O)NY<sup>1</sup>Y<sup>2</sup>, -C(=O)OR<sup>4</sup> or -SO<sub>2</sub>R<sup>4</sup>) may be similarly prepared by reaction of  
compounds of formula (8):

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(8)

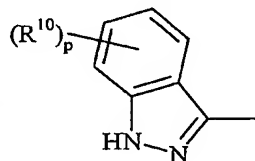
wherein  $R^{13}$  is alkyl and  $X^1$  is O, S,  $SO_2$ , or  $NY^5$  (where  $Y^5$  is  $R^4$ ,  $-C(=O)R^4$ ,  $-C(=O)NY^1Y^2$ ,  $-C(=O)OR^4$  or  $-SO_2R^4$ ), with diethyl oxalate.

- 5 Intermediates of formula (IVx), wherein  $R^1$  is as hereinbefore defined for compounds of formula (Ix), may be prepared by oxidation of compounds of formula (9):



- 10 wherein  $R^1$  is as hereinbefore defined for compounds of formula (Ix). The oxidation may conveniently be carried out with manganese dioxide, or pyridinium chlorochromate, in an inert solvent, such as chloroform, or dichloromethane, and at a temperature at about  $60^\circ C$ . This procedure is particularly

suitable for intermediates of formula (IVx) wherein  $R^1$  is



(in which  $R^{10}$  and p

are as hereinbefore defined).

15

Compounds of formula (9), wherein  $R^1$  is as hereinbefore defined for compounds of formula (Ix), may be prepared by reduction of acids of formula (10):



- 20 wherein  $R^1$  is as hereinbefore defined for compounds of formula (Ix). The reduction may conveniently be carried out with lithium aluminium hydride, in an inert solvent, such as tetrahydrofuran, and at a temperature at about room temperature.

Compounds of formula (9), wherein  $R^1$  is as hereinbefore defined for compounds of formula (Ix), may be prepared by reduction of alkyl esters of formula (10a):

25

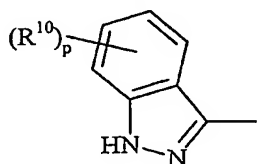




wherein  $R^1$  is as hereinbefore defined for compounds of formula (I<sub>x</sub>). The reduction may conveniently be carried out with lithium aluminium hydride, in an inert solvent, such as tetrahydrofuran, and at a temperature at about room temperature.

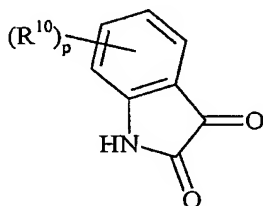
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Acids of formula (10), wherein  $R^1$  is



(in which  $R^{10}$  and  $p$  are as hereinbefore

defined), may be prepared by reaction of indole-diones of formula (11):



(11)

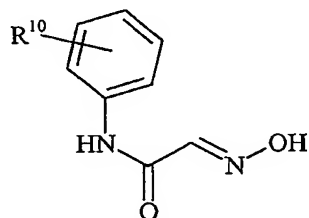
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wherein  $R^{10}$  and  $p$  are as hereinbefore defined, with (i) sodium hydroxide at 50°C, (ii) sodium nitrite then sulfuric acid at 5°C and (iii) tin (II) chloride.

Indole-diones of formula (11), wherein  $R^{10}$  is as hereinbefore defined and  $p$  is one, may be prepared

15

by reaction of compounds of formula (12):



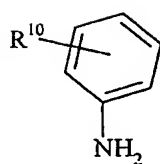
(12)

wherein  $R^{10}$  is as hereinbefore defined, with polyphosphoric acid at a temperature at about 80°C.

20

Compounds of formula (12), wherein  $R^{10}$  is as hereinbefore defined, may be prepared by reaction of anilines of formula (13):

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(13)

wherein  $\text{R}^{10}$  is as hereinbefore defined, with chloral hydrate and hydroxylamine in the presence of hydrochloric acid at a temperature at about  $80^\circ\text{C}$ .

5

Intermediates of formula (Vx), wherein W, X, Y, Z and  $\text{R}^1$  are as hereinbefore defined for compounds of formula (Ix), may be prepared by reaction of compounds of formula (1) with acid chlorides of formula  $\text{R}^1\text{-C(=O)-Cl}$ , optionally in the presence of a tertiary base, such as pyridine, and in an inert solvent, such as dichloromethane, at a temperature at about room temperature.

10

The following references are also cited, which may be used for the preparation of benzimidazoles, pyrazoles or indazoles in the context of the present invention:

- G. R. Newkome, W.W. Paudler, Contemporary Heterocyclic Chemistry, Syntheses, Reactions and Applications, J. Wiley, 1982

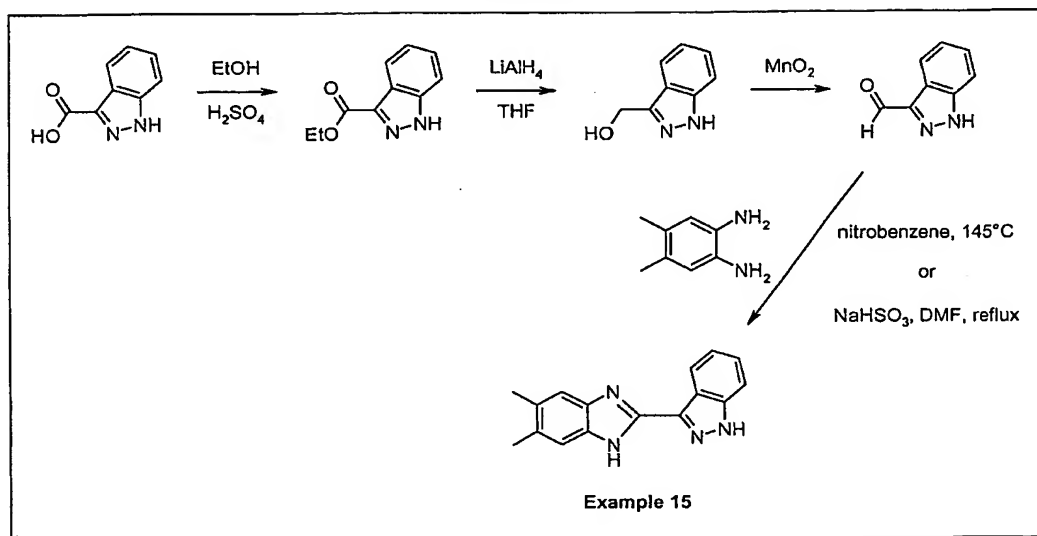
15 - Preston, Heterocyclic Compounds, Benzimidazoles and congeneric tricyclic compounds, J. Wiley, 1981

- Behr, Fusco, Jarboe, Heterocyclic Compounds, Pyrazoles, Pyrazolines, Pyrazolidines, indazoles and condensed rings, J. Wiley, 1967.

20 The following schemes, schemes 5 to 13, illustrate the synthesis of specific examples within the specification using the processes hereinbefore described with the use of appropriate protecting groups where necessary.

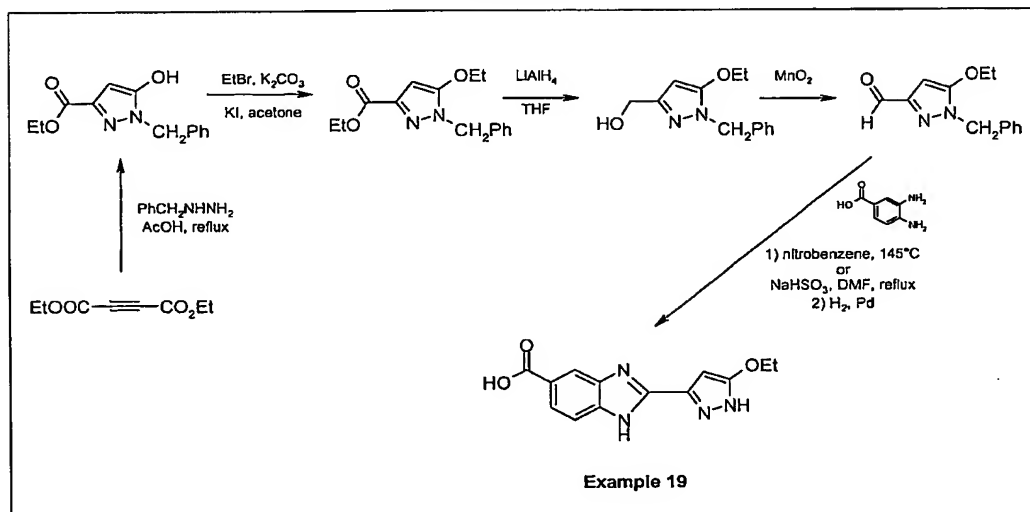
-267-

Scheme 5



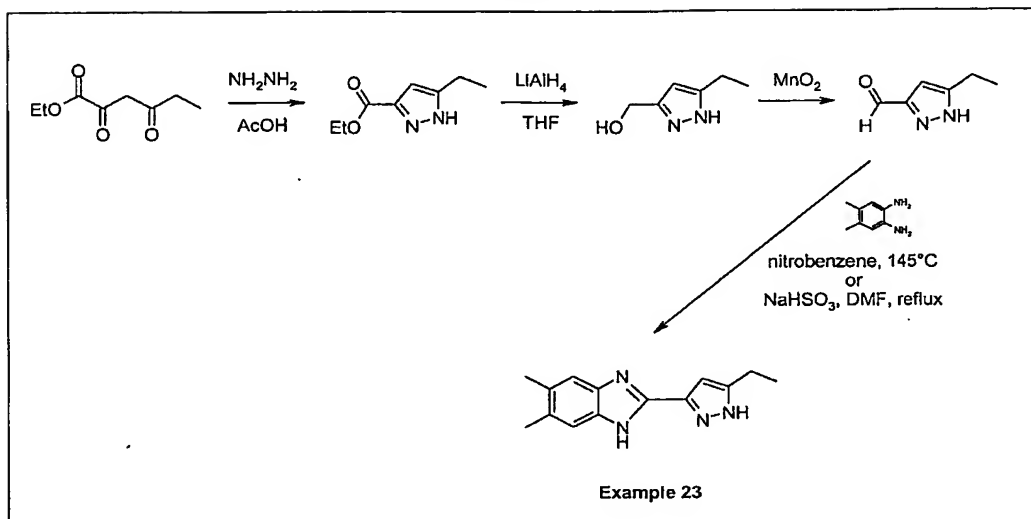
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Scheme 6



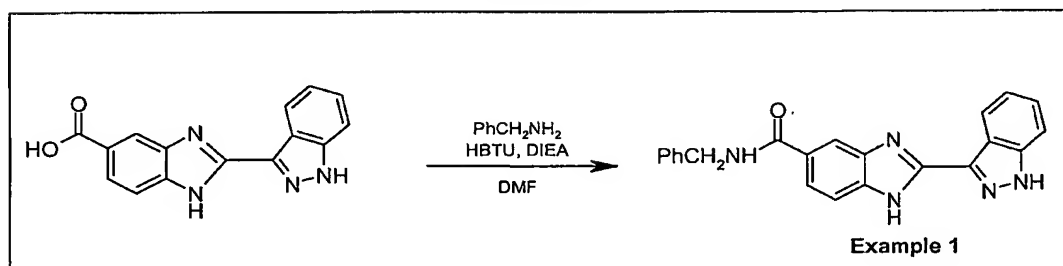
-268-

Scheme 7



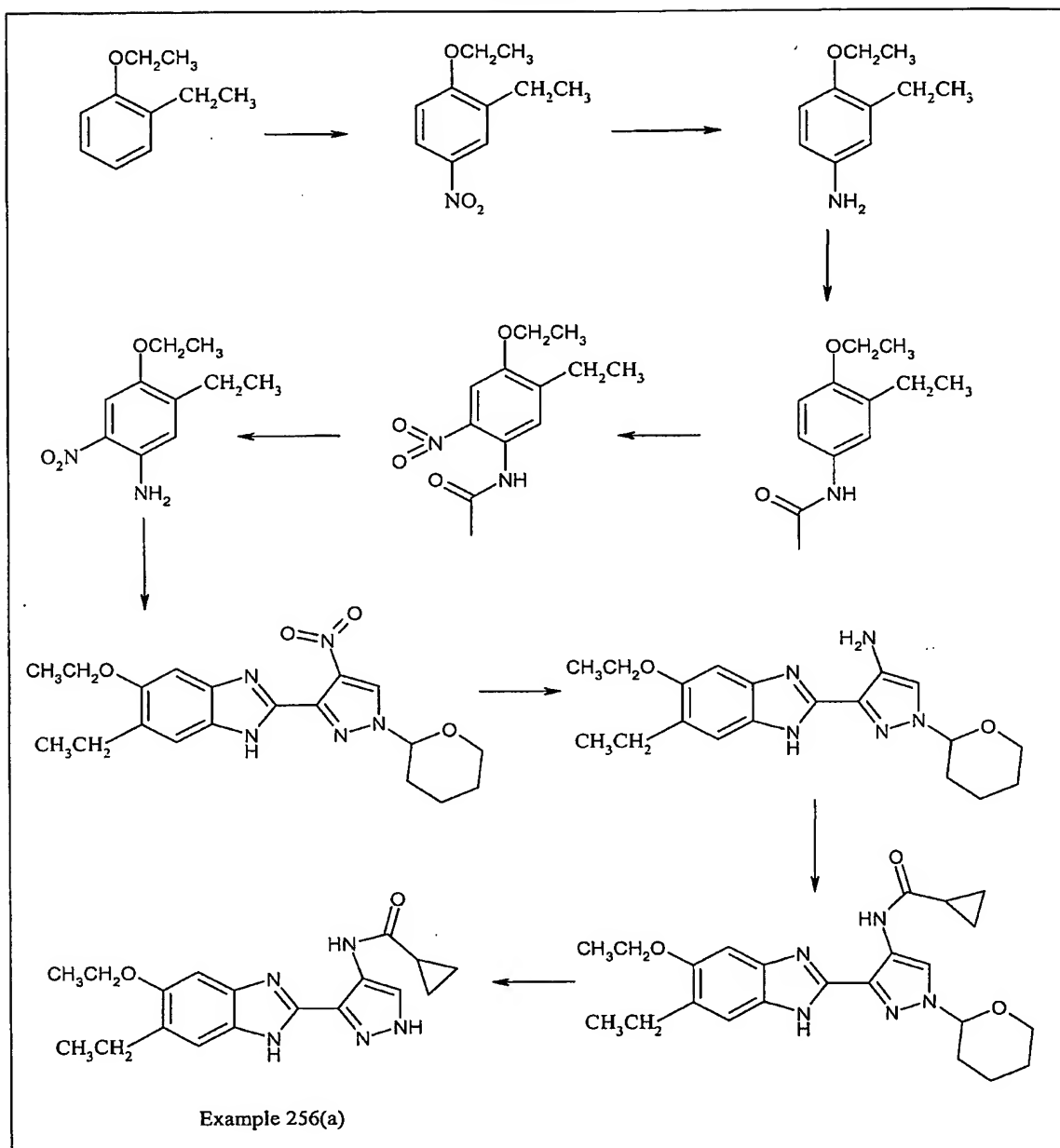
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Scheme 8

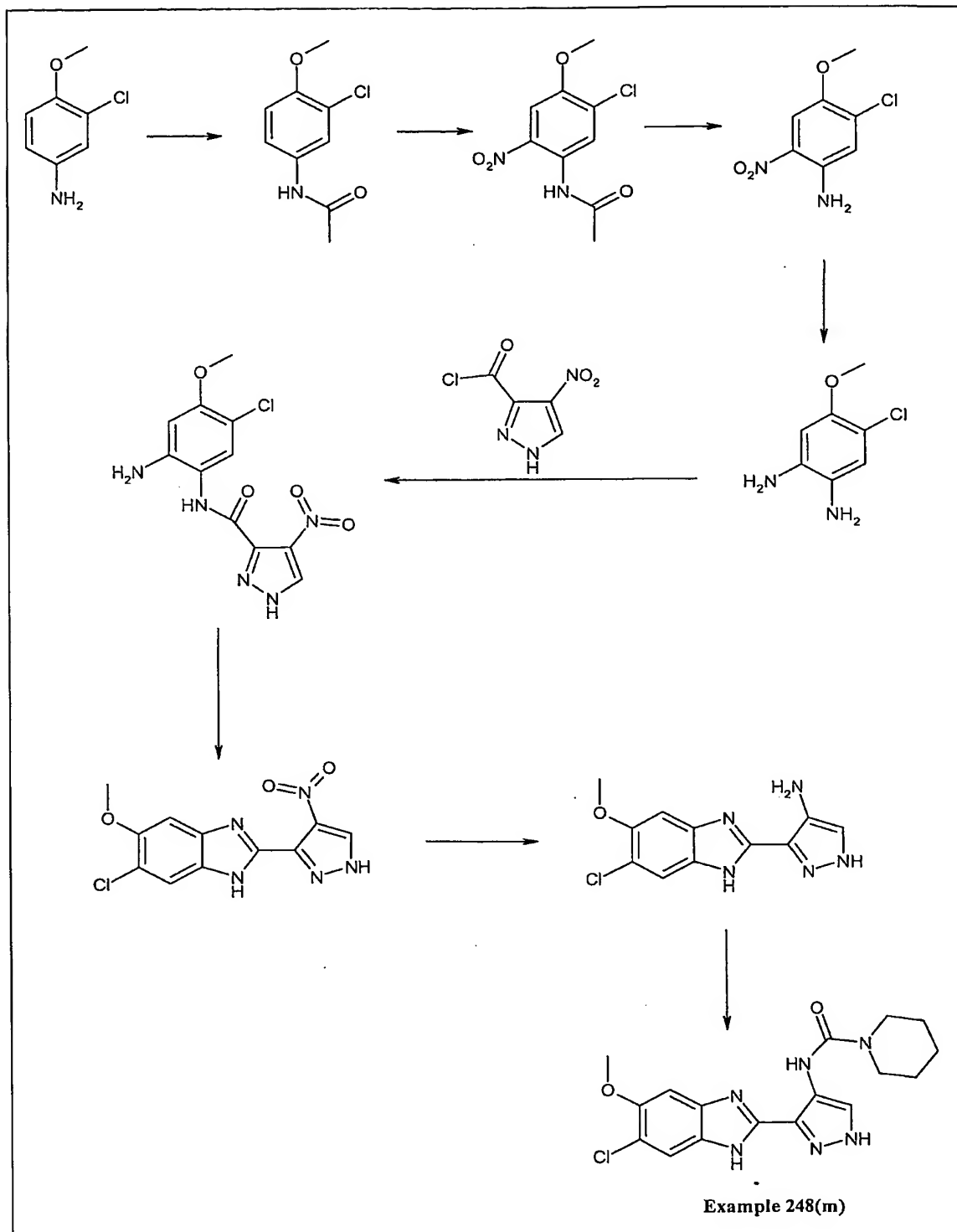


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Scheme 9

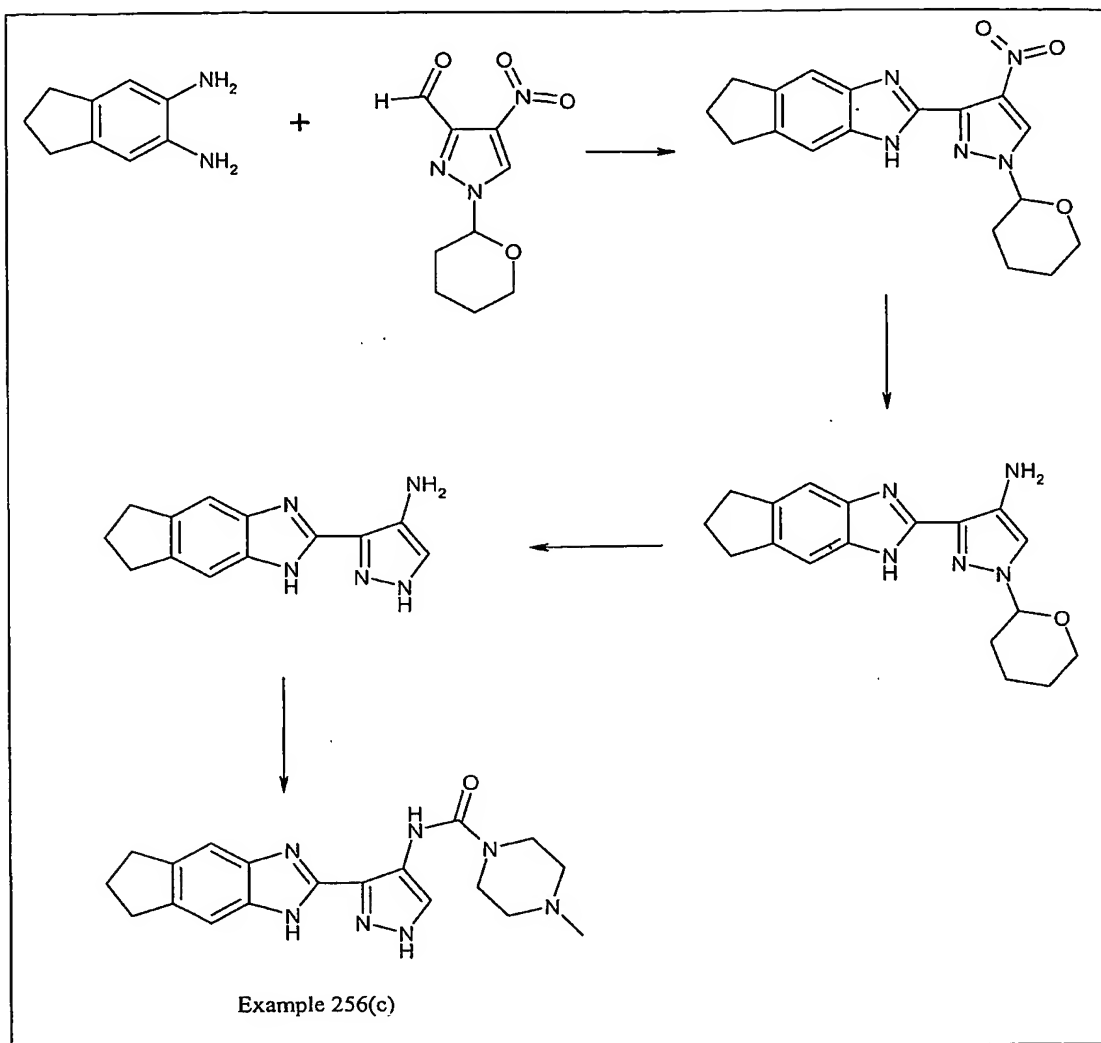


Scheme 10



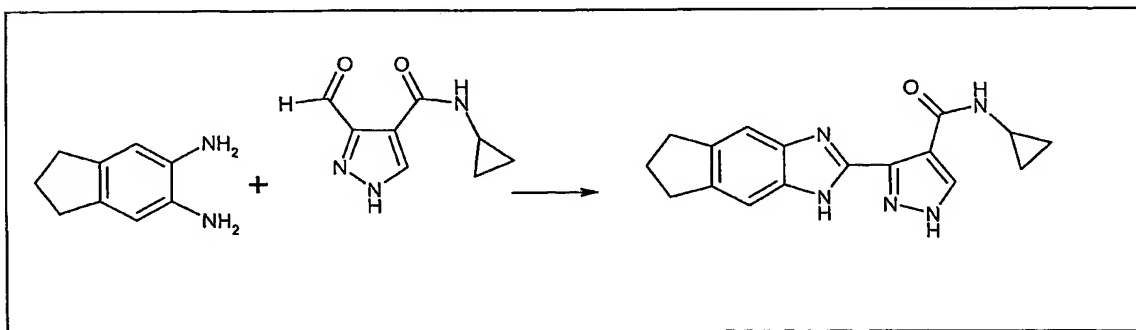
-271-

Scheme 11



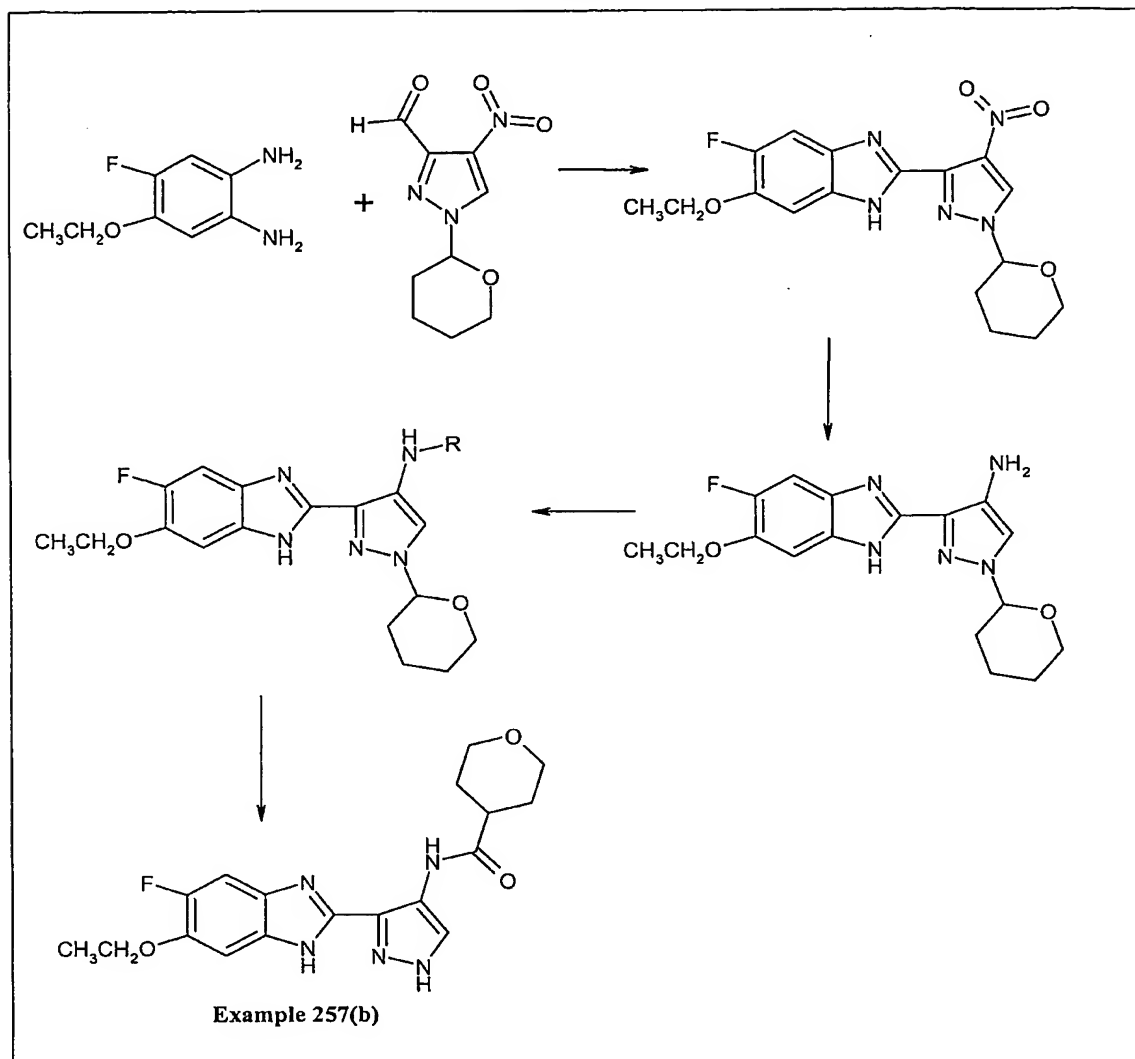
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Scheme 12



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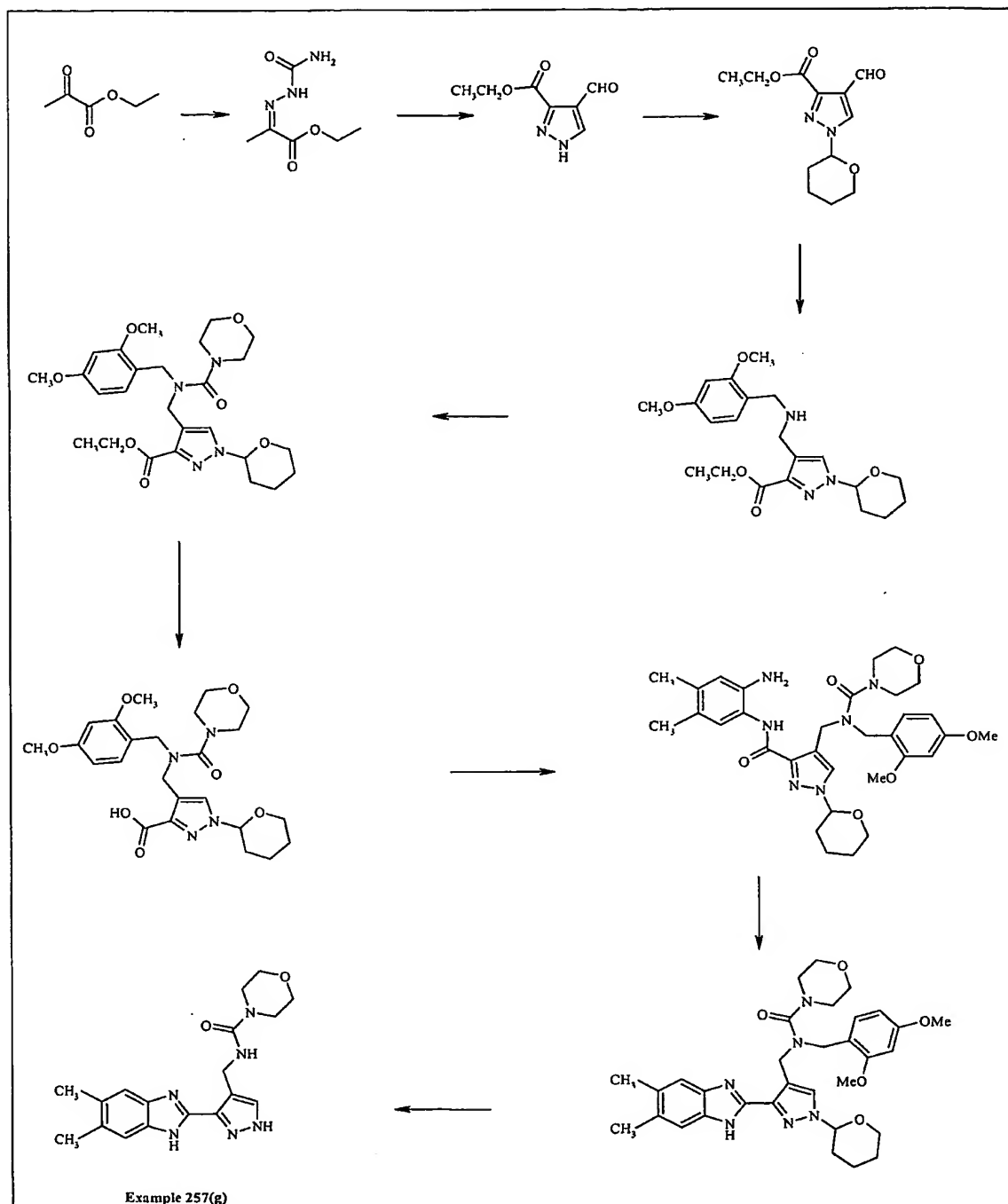
Scheme 13





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Scheme 14



The present invention is further exemplified but not limited by the following illustrative Examples and Reference Examples.

400M Hz  $^1\text{H}$  nuclear magnetic resonance spectra (NMR) were recorded on a Varian Unity INOVA machine. In the nuclear magnetic resonance spectra (NMR) the chemical shifts ( $\delta$ ) are expressed in ppm relative to tetramethylsilane. Abbreviations have the following significances: s = singlet; d = doublet; t = triplet; m = multiplet; q = quartet; dd = doublet of doublets; ddd = doublet of doublets.

10 The thin layer chromatography (TLC)  $R_F$  values were determined using Merck silica plates.

High Pressure Liquid Chromatography - Mass Spectrometry (LC-MS) conditions for determination of retention times ( $R_T$ ) and associated mass ions were as follows:-

METHOD A:

15 Mass Spectrometer (MS) - LCT Time-of-Flight (Micromass UK Ltd) Serial No. KA014 [Ionization Mode: Electrospray (Positive Ion); Scan: ToF MS (Full Scan  $m/z$  100 - 1200, sum for 0.4 s @ 50us/scan) Centroid Mode]. Liquid Chromatograph (LC): Hewlett Packard HP1100 Series Binary Pump (Serial # US80301343)& Degasser (serial # JP73008973).  
20 Hypersil BDS C-18, 3 $\mu$  (4.6mm x 50mm), Reverse Phase Column operated under gradient elution conditions using (A) water containing 0.05% trifluoroacetic acid and (B) acetonitrile containing 0.05% trifluoroacetic acid as the mobile phase (gradient: 0.00 minutes, 100%A; linear gradient to 100% B at 2 minutes; then hold until 1.5 minutes); flow rate 1ml/minute to column & to UV detector, flow split after UV detector such that 0.75ml/minute to ELS detector and 0.25ml/minute to mass spectrometer; injection volume 10 $\mu$ l; Auxiliary Detectors:  
25 (i) Hewlett Packard Model HP1100 Series UV detector (serial # JP73704703) wavelength = 220nm; (ii) Sedere (France) Model SEDEX 75 Evaporative Light Scattering (ELS) detector (serial # 9970002A); temperature = 46°C, Nitrogen pressure = 4bar; Autosampler / Injector: Gilson Model 215 Liquid Handler with Model 819 injection valve (serial # 259E8280).

METHOD B:

30 Waters Symmetry C8 3.5 $\mu$ m HPLC column operated under gradient conditions with mixtures of (A) water containing 0.1% formic and (B) acetonitrile containing 0.1% formic acid as the mobile phase (gradient: 0.00 minutes, 95%A:5%B; 0.75minutes, 95%A:5%B; 3.00 minutes 100%B; 4.00 minutes 100%B; 4.25 minutes 95%A:5%B); flow rate 1.5ml/minute with approximately 200 $\mu$ l/minute split to the Mass Spectrometer; injection volume 20 $\mu$ l; in line

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Diode Array (210-300nm), in line Evaporative light scattering (ELS) detection ELS – temperature 40°C, Gain 7 – 1.5ml/minute; Source temperature 150°C.

## METHOD C:

5 Waters Symmetry C8 3.5µm HPLC column operated under gradient conditions with mixtures of (A) water containing 10mM ammonium acetate and (B) methanol containing 10mM ammonium acetate as the mobile phase (gradient : 0.00 minutes, 95%A:5%B; 0.75minutes, 95%A:5%B; 3.00 minutes 100%B; 4.00 minutes 100%B; 4.25 minutes 95%A:5%B); flow rate 1.5ml/minute with approximately 200µl/minute split to the Mass Spectrometer; injection volume 20µl; in line Diode Array (210-300nm), in line Evaporative light scattering (ELS) detection ELS – temperature 40°C, Gain 7 – 1.5ml/minute; Source temperature 150°C.

## METHOD D:

15 C8 Phenomenex Luna 5µm (250 x 4.6mm) HPLC column operated under gradient conditions with mixtures of (A) methanol containing 10mM ammonium acetate and (B) water containing 10mM ammonium acetate as the mobile phase (gradient: 0 to 2 minutes 10%A:90%B; 2 to 23 minutes ramp up to 100%A; 23 to 30 minutes 100%A; 30 to 37 minutes 10%A:90%B); flow rate 1ml/minute.

## METHOD E:

20 Mass Spectrometer (MS) - LCT Time-of-Flight (Micromass UK Ltd) Serial No. KA014 [Ionization Mode: Electrospray (Positive Ion); Scan: ToF MS (Full Scan m/z 100 - 1200, sum for 0.4 s @ 50us/scan) Centroid Mode]. Liquid Chromatograph (LC): Hewlett Packard HP1100 Series Binary Pump (Serial # US80301343)& Degasser (serial # JP73008973). Synergi 2U Hydro reverse phase 20X4 mm column. solvent A 0.1% trifluoroacetic acid in water; Solvent B 0.1% trifluoroacetic acid in acetonitrile. Gradient 5%B at time 0 to 90% B at 25 time 2 minutes to 100% B at 5 minutes; flow rate 1ml/minute to column & to UV detector, flow split after UV detector such that 0.75ml/minute to ELS detector and 0.25ml/minute to mass spectrometer; injection volume 10µl; Auxiliary Detectors: (i) Hewlett Packard Model HP1100 Series UV detector (serial # JP73704703) wavelength = 220nm; (ii) Sedere (France) Model SEDEX 75 Evaporative Light Scattering (ELS) detector (serial # 9970002A); 30 temperature = 46°C, Nitrogen pressure = 4bar; Autosampler / Injector: Gilson Model 215 Liquid Handler with Model 819 injection valve (serial # 259E8280).

## METHOD F:

35 Agilent 1100 Series HPLC with a YMC CombiScreen Pro C18 5.5 µm 4.6 mm by 33 mm reverse phase column using gradient elution with a mixture of (A) acetonitrile/0.1% trifluoroacetic acid and (B) water/0.1% trifluoroacetic acid (5%A:95%B to 95%A:5%B over

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5.1 minutes) with a 1.2 mL/minute flow rate; Agilent 1100 Series wellplate autosampler with 2  $\mu$ L injection; Agilent 1100 Series diode array detector with 215, 254 and 300 nM wavelength detection; Hewlett Packard 1100 Series mass spectrometer with electrospray and positive ionisation.

5

## METHOD G:

Rainin HPXL dual pump HPLC system with a Rainin Dynamax UV-D II detector for 254 nM wavelength, C18 Metachem Monochrom 10 $\mu$ M (100 x 4.6mm) column using gradient elution with a mixture of (A) water with 0.1% trifluoroacetic acid and (B) acetonitrile as the mobile phase (90%A:10%B to 0%A in 12 minutes) with a flow rate of 1.0 ml/minute

10

C18 Phenomenex Luna 5 $\mu$ M (150 x 4.6mm) column using gradient elution with a mixture of (A) methanol and (B) water with 10mM ammonium acetate as the mobile phase (0-2 minutes 10%A:90%B; 2-25 minutes ramp up to 100%A; 25-32 minutes 100%A; 32-33 minutes 10%A:90%B) with a flow rate of 1.0 ml/minute.

15

## METHOD H:

Waters Symmetry C8 3.5 $\mu$ M Column (50 x 4.6mm) using gradient elution with a mixture of (A) water/0.1% formic acid and (B) acetonitrile/0.1% formic acid (5%B:95%A to 100%B in 3.5min, 100%B for 1 min, 100%B to 5%B:95%A in 0.1min, Equilibrate 5%B:95%A 0.49 minutes, Total run time 5 min) with a flow rate of 1.5mL/minute; Detection 210-300nM, 2nM range interval; Column Temp 30°C; Mass Spec Quadrupole, Electrospray, cone voltage 25V, +/- ion switching, centroid data, 140 to 850 Da, 0.6 sec scan, 0.4 sec inter scan delay.

20

## METHOD J:

Waters Symmetry C8 3.5 $\mu$ M Column (50 x 4.6mm) using gradient elution with a mixture of (A) 0.1% formic acid in water and (B) 0.1% formic acid in acetonitrile (5%B:95%A 0.75 minutes to 100%B in 4 minutes, 100%B for 0.5 minutes, 100%B to 5%B:95%A in 1 minute, Total run time 5 minutes with a flow rate of 1.5mL/minute; Detection 210-300nM, 2nM range interval; Column Temp 30°C; Mass Spec Quadrupole, Electrospray, cone voltage 25V, +/- ion switching, centroid data, 140 to 850 Da, 0.6 sec scan, 0.4 sec inter scan delay.

25

30

## METHOD K:

Waters Symmetry C8 3.5 $\mu$  Column (50 x 4.6mm) using gradient elution with a mixture of (A) 10mM ammonium acetate in water and (B) 10mM ammonium acetate in methanol (5%B:95%A 0.75 minutes to 100%B in 4 minutes, 100%B for 0.5 minutes, 100%B to 5%B:95%A in 1 minute, Total run time 5 min) with a flow rate of 1.5mL/minute; Detection

35

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210-300nM, 2nm range interval; Column Temp 30°C; Mass Spec Quadrupole, Electrospray, cone voltage 25V, +/- ion switching, centroid data, 140 to 850 Da, 0.6 sec scan, 0.4 sec inter scan delay.

5    **METHOD L:**

Phenomenex Luna C18(2) 3µM Column (150 x 4.6mm) using gradient elution with a mixture of (A) 0.1% formic acid in water and (B) 0.1% formic acid in acetonitrile (20%B:80%A to 100%B in 10 minutes, 100%B for 2 minutes, 100%B to 20%B:80%A in 0.5 minutes, 20%B:80%A for 3.5 minutes, Total run time 16 minutes with a flow rate of 1.0mL/minute;

10    210-300nM, 220 and 254nM extracted and ELSD; Column Temp 30°C; Mass Spec Quadrupole, Electrospray, cone voltage 25V, +/- ion switching, centroid data, 100 to 900 Da, 0.6 sec scan, 0.4 sec inter scan delay.

**METHOD M:**

15    Phenomenex Luna C18(2) 3µM Column (150 x 4.6mm) using gradient elution with a mixture of (A) 0.1% formic acid in water and (B) 0.1% formic acid in acetonitrile (5%B:95%A to 60%B:40%A in 10 minutes, 60%B:40%A for 2 minutes, 60%B:40%A to 5%B:95%A in 0.5 minutes, 5%B:95%A for 3.5 minutes, Total run time 16 minutes with a flow rate of 1.0mL/minute; 210-300nM, 220 and 254nM extracted and ELSD; Column Temp 30°C; Mass

20    Spec Quadrupole, Electrospray, cone voltage 25V, +/- ion switching, centroid data, 100 to 900 Da, 0.6 sec scan, 0.4 sec inter scan delay.

**METHOD N:**

25    Waters Symmetry C8 3.5µM Column (50 x 4.6mm) using gradient elution with a mixture of (A) 10mM ammonium acetate in water and (B) 10mM ammonium acetate in methanol (5%B:95%A to 100%B in 3.5 minutes, 100%B for 1 minute, 100%B to 5%B:95%A in 0.1 minute, Equilibrate 5%B:95%A 0.49 minutes, Total run time 5 minutes) with a flow rate of 1.5mL/minute; Detection 210-300nM, 2nM range interval; Column Temp 30°C; Mass Spec

30    Quadrupole, Electrospray, cone voltage 25V, +/- ion switching, centroid data, 140 to 850 Da, 0.6 sec scan, 0.4 sec inter scan delay.

**METHOD P:**

35    Phenomenex Luna C18(2) 3µM Column (150 x 4.6mm) using gradient elution with a mixture of (A) 10mM ammonium acetate in water and (B) 10mM ammonium acetate in methanol (5%B:95%A to 60%B:40%A in 10 minutes, 60%B:40%A for 2 minutes, 60%B:40%A to 5%B:95%A in 0.5 minutes, 5%B:95%A for 3.5 minutes, Total run time 16 minutes with a flow

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rate of 1.0mL/minute; 210-300nM, 220 and 254nM extracted and ELSD; Column Temp 30°C; Mass Spec Quadrupole, Electrospray, cone voltage 25V, +/- ion switching, centroid data, 100 to 900 Da, 0.6 sec scan, 0.4 sec inter scan delay.

5 METHOD Q:

Phenomenex Luna C18(2) 3µM Column (150 x 4.6mm) using gradient elution with a mixture of (A) 10mm ammonium acetate in water and (B) 10mm ammonium acetate in methanol (20%B:80%A to 100%B in 10 minutes, 100%B for 2 minutes, 100%B to 20%B:80%A in 0.5 minutes, 20%B:80%A for 3.5 minutes, Total run time 16 minutes with a flow rate of 1.0mL/minute; 210-300nM, 220 and 254nM extracted and ELSD; Column Temp 30°C; Mass Spec Quadrupole, Electrospray, cone voltage 25V, +/- ion switching, centroid data, 100 to 900 Da, 0.6 sec scan, 0.4 sec inter scan delay.

METHOD R:

15 Phenomenex Luna C18(2) 5µM Column (150 x 4.6mm) using gradient elution with a mixture of (A) 10mm ammonium acetate in water and (B) 10mm ammonium acetate in methanol (40%B:60%A to 100%B in 10 minutes, 100%B for 2 minutes, 100%B to 40%B:60%A in 0.5 minutes, 40%B:60%A for 3.5 minutes, Total run time 16 minutes with a flow rate of 1.0mL/minute; 210-300nM, 220 and 254nM extracted and ELSD; Column Temp 30°C; Mass Spec Quadrupole, Electrospray, cone voltage 25V, +/- ion switching, centroid data, 100 to 900 Da, 0.6 sec scan, 0.4 sec inter scan delay.

High Pressure Liquid Chromatography conditions for determination of retention times ( $R_T$ ) were as follows:-

25 METHOD A1:

YMC ODS-AQ (2 x 50mm) column using gradient elution conditions with mixtures of acetonitrile, water and formic acid as the mobile phase [95/5/0.1% to 5/95/0.1%] and a flow rate of 0.4mL/minute.

30 METHOD B1:

C18 Phenomenex Luna 5µM (150 x 4.6mm) column using gradient elution with a mixture of (A) acetonitrile containing 0.1% formic acid and (B) water containing 0.1% formic acid as the mobile phase (gradient: 0-2 minutes 10%A:90%B; 2-25 minutes ramp up to 100%A; 25-32 minutes 100%A; 32-33 minutes 10%A:90%B) with a flow rate of 1.0 ml/minute.

35

METHOD C1:

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C18 Phenomenex Luna 5 $\mu$ M (150 x 4.6mm) column using gradient elution with a mixture of (A) methanol and (B) water with 10mM ammonium acetate as the mobile phase (0-2 minutes 10%A:90%B; 2-25 minutes ramp up to 100%A; 25-32 minutes 100%A; 32-33 minutes 10%A:90%B) with a flow rate of 1.0 ml/minute.

5

## METHOD D1:

C18 Phenomenex Luna 3 $\mu$ M (150 x 4.6mm) column using gradient elution with a mixture of (A) acetonitrile containing 0.1% formic acid and (B) water containing 0.1% formic acid with a flow rate of 1.0 ml/minute

10

## METHOD E1:

C18 Phenomenex Luna 3 $\mu$ M (150 x 4.6mm) column using gradient elution with a mixture of (A) methanol and (B) water with 10mM ammonium acetate as the mobile phase (20%A:80%B to 100%A in 10 minutes; 100%A for 2 minutes; 100%A to 20%A:80%B in 0.5 minutes; 20%A:80%B for 3.5 minutes) with a flow rate of 1.0 ml/minute.

15

## METHOD F1:

C18 Phenomenex Luna 3 $\mu$ M (150 x 4.6mm) column using gradient elution with a mixture of acetonitrile and water with 0.1% formic acid.

20

## METHOD G1:

C18 Phenomenex Luna 3 $\mu$ M (150 x 4.6mm) column using gradient elution with a mixture of (A) methanol and (B) water with 10mM ammonium acetate as the mobile phase (5%A:95%B to 60%A:40%B in 10 minutes; 60%A:40%B for 2 minutes; 60%A:40%B to 5%A:95%B in 0.5 minutes; 5%A:95%B for 3.5 minutes) with a flow rate of 1.5 ml/minute.

25

Gas Chromatography - Mass Spectrometry (GC-MS) conditions for determination of retention times ( $R_T$ ) and associated mass ions were as follows:

Varian 3800 Gas Chromatograph with Chrompack 0.25 mm diameter fused silica 30 m column using a 20 minute elution with 25°C/minute gradient from 50 to 300°C from time 1 to 11 minute; helium mobile phase with 1.2 mL/minute flow rate; 3-8  $\mu$ L injection volume with 50:50 injection split ratio; Varian 2000R mass spectrometer with electron impact detection for ions 40 to 650 m/z.

30

General method of LC-MS purification of examples 1 to 229: a Waters Fraction Lynx system is used, and the separations were carried out on a Waters Symmetry column (C18, 5  $\mu$ M, 19x50 mm, catalogue number 186000210), eluting with a linear gradient of acetonitrile containing 0.07% trifluoroacetic acid

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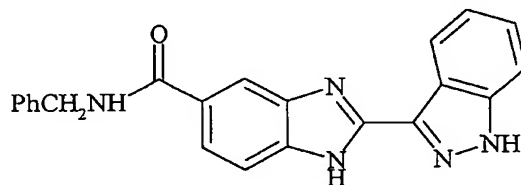
(v/v) in water containing 0.07% trifluoroacetic acid (v/v), gradient rising from 5% to 95% (v/v) of acetonitrile/ trifluoroacetic acid over 8 minutes, and then 2 minutes at 95% acetonitrile/ trifluoroacetic acid at a flow rate of 10 ml/minute. The products are injected in solution in dimethylsulfoxide, and collected according to the detection of their molecular weight.

5

Compound names were generated using an auto-nom plug in for ISIS2.3 or ISIS2.4.

#### EXAMPLE 1

##### 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid benzylamide



10

2-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid benzylamide may be prepared in the following manner.

A solution of 27.3 mg of HBTU in 0.2 ml of dimethylformamide is added, at a temperature in the region of 20°C, to a solution of 20 mg of 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid in 0.42 ml of anhydrous dimethylformamide. After stirring at a temperature in the region of 20°C for one hour, 15.7 ml of benzylamine are added, followed by addition of 12.4 ml of N,N-diisopropylethylamine dissolved in 0.32 ml of dimethylformamide. After 20 hours, at a temperature in the region of 20°C, the reaction medium is concentrated under reduced pressure, at a temperature in the region of 40°C. The crude residue obtained is dissolved in DMSO and purified by preparative LC-MS. The fractions containing the desired product are combined and concentrated under reduced pressure at a temperature in the region of 40°C. 20 mg of 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid benzylamide are thus obtained in the form of a cream-coloured powder, the characteristics of which are as follows:

20

LC-MS retention time = 2.86 minutes

25

2-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid may be prepared in the following manner:

1.3 g of sodium metabisulphite and 1.04 g of 3,4-diaminobenzoic acid are added, at a temperature in the region of 20°C, to a solution of 1 g of 1H-indazole-3-carboxaldehyde in 10 ml of dimethylformamide. The reaction mixture is refluxed for one hour and then cooled to a temperature in the region of 20°C and diluted with dichloromethane, and the mixture is filtered. The collected filtrate is concentrated under reduced pressure. The brown lacquer obtained (340 mg) is purified by

30



preparative LC-MS. 138.8 mg of 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid are thus obtained in the form of a beige-coloured powder.

1H-Indazole-3-carboxaldehyde may be prepared in the following manner:

5

A solution of 2.27 g of (1H-indazol-3-yl)methanol in 220 ml of 1,2-dimethoxyethane is added to 13.32 g of manganese dioxide. After one hour at a temperature in the region of 20°C, the reaction mixture is refluxed for 15 minutes. After cooling to a temperature in the region of 20°C, the reaction medium is filtered through a sinter funnel packed with Celite. The collected filtrate is concentrated under reduced pressure at a temperature in the region of 40°C. 2.02 g of 1H-indazole-3-carboxaldehyde are thus obtained in the form of a yellow powder, the characteristics of which are as follows:

10

<sup>1</sup>H NMR (DMSO d<sub>6</sub>, 400 MHz): 7.40 ppm (triplet, 1H); 7.55 ppm (triplet, 1H); 7.75 ppm (doublet, 1H); 8.18 ppm (doublet, 1H); 10.23 ppm (singlet, 1H); 14.2 ppm (multiplet, 1H).

15

(1H-Indazol-3-yl)methanol may be prepared in the following manner:

20

3.2 g of lithium aluminium hydride are added portionwise to a solution of 7.08 g of methyl 3-indazolecarboxylate in 80 ml of tetrahydrofuran, cooled to a temperature in the region of 0°C by an ice bath. After 4 hours at a temperature in the region of 0°C, 1.6 g of lithium aluminium hydride are added. After 2 hours at a temperature in the region of 0°C, the reaction medium is treated successively with 6 ml of water and then 6 ml of aqueous 1N sodium hydroxide solution and finally 18 ml of water. The reaction mixture is filtered through paper and the aqueous filtrate is then extracted with dichloromethane. The collected organic fractions are combined, dried over magnesium sulphate and concentrated under reduced pressure at a temperature in the region of 40°C. 3.15 g of (1H-indazol-3-yl)methanol are obtained in the form of an off-white powder, the characteristics of which are as follows:

25

<sup>1</sup>H NMR (DMSO d<sub>6</sub>, 400 MHz): 4.80 ppm (doublet, 2H); 5.25 ppm (triplet, 1H); 7.15 ppm (triplet, 1H); 7.35 ppm (triplet, 1H); 7.51 ppm (doublet, 1H); 7.87 ppm (doublet, 1H); 12.81 ppm (multiplet, 1H).

30

Methyl 3-indazolecarboxylate may be prepared in the following manner:

35

0.5 ml of concentrated sulphuric acid (95%) is added dropwise, at a temperature in the region of 20°C, to a solution of 9.13 g of 3-indazolecarboxylic acid in 100 ml of methanol. After refluxing for 20

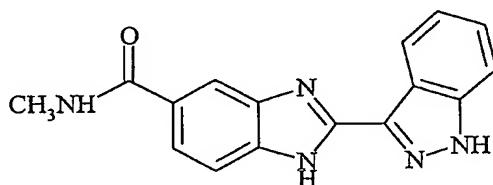
-282-

hours, the reaction medium is concentrated under reduced pressure at a temperature in the region of 40°C. The aqueous residue obtained is extracted with dichloromethane. The organic phases are combined, washed with water until neutral, dried over magnesium sulphate and then concentrated under reduced pressure at a temperature in the region of 40°C. The yellow powder obtained is washed with ethyl ether. A white powder is obtained. The filtrate is concentrated under reduced pressure until a yellow powder is obtained. This yellow powder is washed again with ethyl ether until a white powder is obtained. The yellow filtrate is concentrated a third time under reduced pressure and the yellow powder collected is itself also washed with ethyl ether. All the fractions of white powder are combined. 7.08 g of methyl 3-indazolecarboxylate are thus obtained in the form of a white powder.

10

### EXAMPLE 2

#### 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-methylamide



2-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-methylamide may be prepared by following the procedure for the preparation of 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-benzylamide (Example 1):

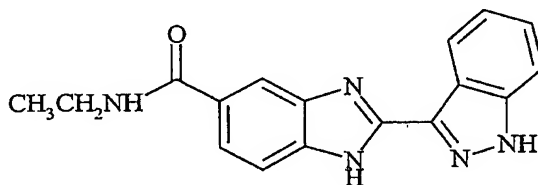
15

Starting with 20 mg of 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid and 71.8 µl of a methylamine solution (2M in tetrahydrofuran), 14.8 mg of expected product are obtained.

20

### EXAMPLE 3

#### 2-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-ethylamide

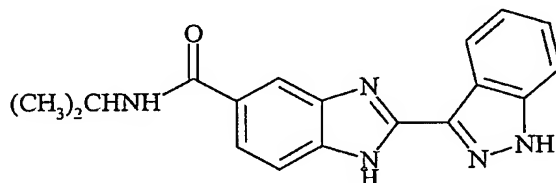


2-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-ethylamide may be prepared by following the procedure for the preparation of 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-benzylamide (Example 1):

25

Starting with 20 mg of 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid and 19.4 ml of an ethylamine solution (33% in water) 14.8 mg of 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-ethylamide are obtained.

5

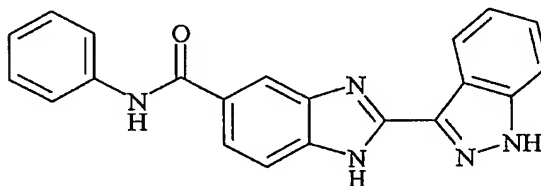
EXAMPLE 42-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-isopropylamide

2-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-isopropylamide may be prepared by following the procedure for the preparation of 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-benzylamide (Example 1):

10

Starting with 20 mg of 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid and 12.3 ml of isopropylamine, 16.5 mg of 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-isopropylamide are obtained.

15

EXAMPLE 52-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-phenylamide

2-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-phenylamide may be prepared by following the procedure for the preparation of 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-benzylamide (Example 1):

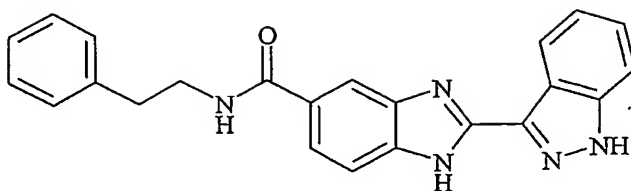
20

Starting with 20 mg of 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid and 13.1 ml of aniline, 14.1 mg of 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-phenylamide are obtained in the form of a white powder.

25

EXAMPLE 62-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-phenethylamide

-284-

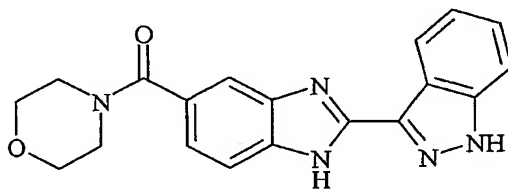


2-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-phenethylamide may be prepared by following the procedure for the preparation of 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-benzylamide (Example 1):

5

Starting with 20 mg of 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid and 18 ml of phenethylamine, 17.7 mg of 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-phenethylamide are obtained in the form of a white powder.

10

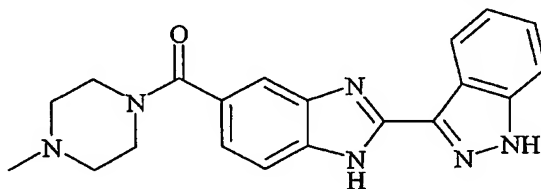
EXAMPLE 72-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-morpholinoamide

2-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-morpholinoamide may be prepared by following the procedure for the preparation of 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid

15 N-benzylamide (Example 1):

Starting with 20 mg of 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid and 12.5 ml of morpholine, 18.6 mg of 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-morpholinoamide are obtained in the form of a pale yellow powder.

20

EXAMPLE 82-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-(N'-methyl-piperazino)amide

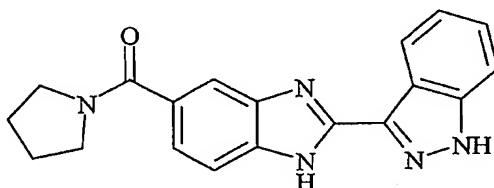
-285-

2-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-(N'-methyl-piperazino)amide may be prepared by following the procedure for the preparation of 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-benzylamide (Example 1):

- 5 Starting with 20 mg of 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid and 15.9 ml of N-methylpiperazine, 16.1 mg of 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-(N'-methyl-piperazino)amide are obtained in the form of a yellow oil.

#### EXAMPLE 9

##### 10 2-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-pyrrolidinoamide



2-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-pyrrolidinoamide may be prepared by following the procedure for the preparation of 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-benzylamide (Example 1):

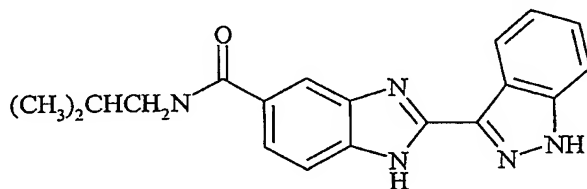
15

Starting with 20 mg of 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid and 12 ml of pyrrolidine, 17.7 mg of 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-pyrrolidinoamide are obtained in the form of a pale yellow powder.

20

#### EXAMPLE 10

##### 2-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-(isobutyl)amide



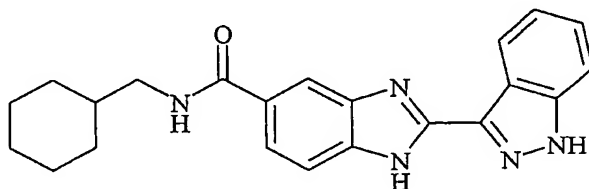
2-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-(isobutyl)amide may be prepared by following the procedure for the preparation of 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid

25 N-benzylamide (Example 1):

-286-

Starting with 20 mg of 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid and 14.6 ml of isobutylamine, 7.6 mg of 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-(isobutyl)amide are obtained in the form of a pale yellow powder.

5

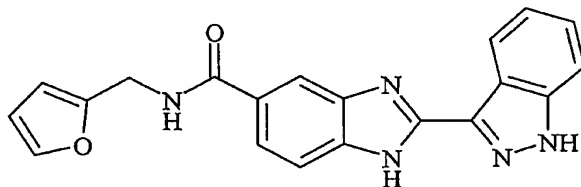
EXAMPLE 112-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-(cyclohexylmethyl)amide

2-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-(cyclohexylmethyl)amide may be prepared by following the procedure for the preparation of 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-benzylamide (Example 1):

10

Starting with 20 mg of 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid and 18.7 ml of cyclohexylmethylamine, 16.1 mg of 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-(cyclohexylmethyl)amide are obtained in the form of a white powder.

15

EXAMPLE 122-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-(2-furfuryl)amide

2-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-(2-furfuryl)amide may be prepared by following the procedure for the preparation of 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-benzylamide (Example 1):

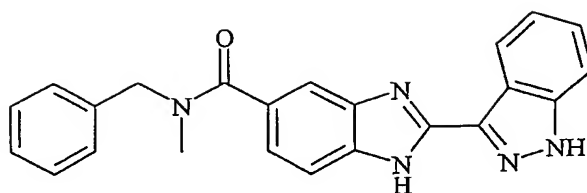
20

Starting with 20 mg of 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid and 13.3 ml of 2-furfurylamine, 14.8 mg of 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-(2-furfuryl)amide are obtained in the form of a white powder.

25

EXAMPLE 132-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-benzyl-N-methylamide

-287-

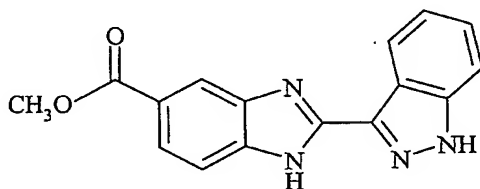


2-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-benzyl-N-methylamide may be prepared by following the procedure for the preparation of 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-benzylamide (Example 1):

- 5 Starting with 20 mg of 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid and 18.6 ml of N-methylbenzylamine, 7.3 mg of 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-benzyl-N-methylamide are obtained in the form of a pale yellow powder.

#### EXAMPLE 14

##### 10 Methyl 2-(1H-indazol-3-yl)-3H-benzimidazole-5-carboxylate

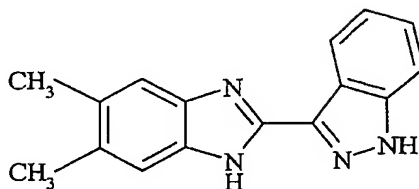


Methyl 2-(1H-indazol-3-yl)-3H-benzimidazole-5-carboxylate may be prepared in the following manner:

- 15 A mixture of 0.1 g of 1H-indazole-3-carboxaldehyde and 113.7 mg of methyl 3,4-diaminobenzoate in 10 ml of nitrobenzene is maintained at a temperature in the region of 145°C for 3 hours and 45 minutes. After cooling to a temperature in the region of 20°C, the reaction mixture is purified on SPE (5 g of SCX phase, processing and washing with methanol, extraction with a 2N ammoniacal methanol solution). The ammoniacal solution collected during the detachment is then concentrated under
- 20 reduced pressure at a temperature in the region of 40°C. 198.3 mg of an orange lacquer are obtained and are purified by preparative LC-MS. 42.7 mg of methyl 2-(1H-indazol-3-yl)-3H-benzimidazole-5-carboxylate are thus obtained in the form of a beige-coloured powder, the characteristics of which are as follows:

- 25 <sup>1</sup>H NMR (DMSO d<sub>6</sub>, 400 MHz): 3.95 ppm (singlet, 3H); 7.40 ppm (triplet, 1H); 7.55 ppm (triplet, 1H); 7.75 ppm (doublet, 1H); 7.77 ppm (doublet, 1H); 7.95 ppm (doublet, 1H); 8.57 ppm (doublet, 1H); 13.85 ppm (multiplet, 1H).

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EXAMPLE 155,6-dimethyl-2-(1H-indazol-3-yl)-1H-benzimidazole

5,6-Dimethyl-2-(1H-indazol-3-yl)-1H-benzimidazole may be prepared by following the procedure for the preparation of methyl 2-(1H-indazol-3-yl)-3H-benzimidazole-5-carboxylate (Example 14):

Starting with 200 mg of 1H-indazole-3-carboxaldehyde and 177 mg of 4,5-dimethyl-1,2-phenylenediamine in 10 ml of nitrobenzene, 15.9 mg of 5,6-dimethyl-2-(1H-indazol-3-yl)-1H-benzimidazole are obtained in the form of a dark red powder, the characteristics of which are as follows:

<sup>1</sup>H NMR (DMSO d<sub>6</sub>, 400 MHz): 2.60 ppm (singlet, 6H); 7.42 ppm (triplet, 1H); 7.53 ppm (singlet, 2H); 7.58 ppm (triplet, 1H); 7.78 ppm (doublet, 1H); 8.52 ppm (doublet, 1H); 14.05 ppm (multiplet, 1H).

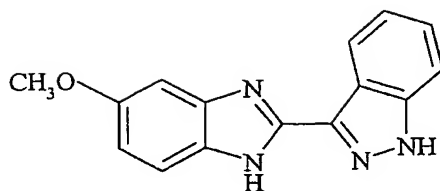
5,6-Dimethyl-2-(1H-indazol-3-yl)-1H-benzimidazole may also be prepared according to the following procedure:

389 mg of sodium metabisulphite are added, at a temperature in the region of 20°C, to a solution of 300 mg of 1H-indazole-3-carboxaldehyde and 279 mg of 4,5-dimethyl-1,2-phenylenediamine in 3 ml of dimethylformamide. The reaction mixture is refluxed for 4 hours and then cooled to a temperature in the region of 20°C and filtered through paper. The collected filtrate is concentrated under reduced pressure. The brown lacquer obtained (340 mg) is purified by preparative LC-MS. 138.8 mg of 5,6-dimethyl-2-(1H-indazol-3-yl)-1H-benzimidazole are thus obtained in the form of a beige-coloured powder.

EXAMPLE 165-methoxy-2-(1H-indazol-3-yl)-1H-benzimidazole



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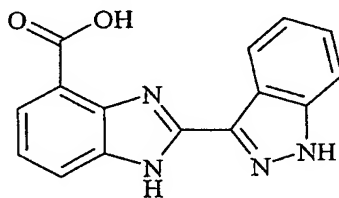


5-Methoxy-2-(1H-indazol-3-yl)-1H-benzimidazole may be prepared by following the procedure for the preparation of methyl 2-(1H-indazol-3-yl)-3H-benzimidazole-5-carboxylate (Example 14):

- 5 Starting with 200 mg of 1H-indazole-3-carboxaldehyde and 274.4 mg of 4-methoxy-1,2-phenylenediamine dihydrochloride in 10 ml of nitrobenzene, 45.6 mg of 5-methoxy-2-(1H-indazol-3-yl)-1H-benzimidazole are obtained in the form of a light brown powder, the characteristics of which are as follows:
- 10 <sup>1</sup>H NMR (DMSO d<sub>6</sub>, 400 MHz): 3.90 ppm (singlet, 3H); 7.00 ppm (doublet, 1H); 7.18 ppm (doublet, 1H); 7.40 ppm (triplet, 1H); 7.55 ppm (triplet, 1H); 7.64 ppm (doublet, 1H); 7.73 ppm (doublet, 1H); 8.52 ppm (doublet, 1H); 13.91 ppm (multiplet, 1H).

#### EXAMPLE 17

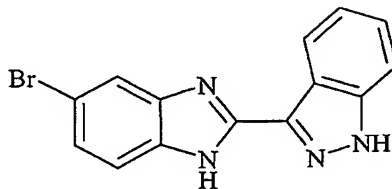
- 15 2-(1H-Indazol-3-yl)-3H-benzimidazole-4-carboxylic acid



2-(1H-Indazol-3-yl)-3H-benzimidazole-4-carboxylic acid may be prepared by following the procedure for the preparation of methyl 2-(1H-indazol-3-yl)-3H-benzimidazole-5-carboxylate (Example 14):

- 20 Starting with 237 mg of 1H-indazole-3-carboxaldehyde and 305.5 mg of 2,3-diaminobenzoic acid hydrochloride in 10 ml of nitrobenzene, 20.5 mg of 2-(1H-indazol-3-yl)-3H-benzimidazole-4-carboxylic acid are obtained in the form of a beige-coloured powder, the characteristics of which are as follows:
- 25 <sup>1</sup>H NMR, DMSO d<sub>6</sub>, 400 MHz: 7.40 ppm (triplet, 1H); 7.42 ppm (triplet, 1H); 7.55 ppm (triplet, 1H); 7.72 ppm (doublet, 1H); 7.90 ppm (doublet, 1H); 8.02 ppm (doublet, 1H); 8.52 ppm (doublet, 1H); 13.68 ppm (multiplet, 1H).

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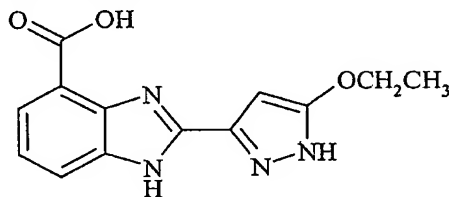
EXAMPLE 185-bromo-2-(1H-indazol-3-yl)-3H-benzimidazole

- 5 5-Bromo-2-(1H-indazol-3-yl)-3H-benzimidazole may be prepared by following the procedure for the preparation of 5,6-dimethyl-2-(1H-indazol-3-yl)-1H-benzimidazole (Example 15):

Starting with 643 mg of 1H-indazole-3-carboxaldehyde, 816 mg of 4-bromo-1,2-phenylenediamine, and 836.5 mg of sodium metabisulphite in 15 ml of dimethylformamide, and after purification by SPE  
 10 (SCX phase, washing with methanol, extraction with 2N ammoniacal methanol) followed by a chromatography under pressure on silica, 939 mg of 5-bromo-2-(1H-indazol-3-yl)-3H-benzimidazole are obtained in the form of a brick-red powder.

EXAMPLE 19

- 15 2-(5-Ethoxy-2H-pyrazol-3-yl)-1H-benzimidazole-4-carboxylic acid



- 2-(5-Ethoxy-2H-pyrazol-3-yl)-1H-benzimidazole-4-carboxylic acid may be obtained from 2-(2-benzyl-5-ethoxy-2H-pyrazol-3-yl)-1H-benzimidazole-4-carboxylic acid by deprotection of the benzyl group in the presence of hydrogen and a catalyst such as palladium.  
 20 2-(2-Benzyl-5-ethoxy-2H-pyrazol-3-yl)-1H-benzimidazole-4-carboxylic acid may be prepared by following the procedure for the preparation of 5,6-dimethyl-2-(1H-indazol-3-yl)-1H-benzimidazole (Example 15):

Starting with 21.6 mg of 2-benzyl-5-ethoxy-2H-pyrazole-3-carboxaldehyde, and 17.7 mg of 3,4-diaminobenzoic acid hydrochloride in 1 ml of nitrobenzene, and after purification by SPE (SCX phase,  
 25 washing with methanol, extraction with 2N ammoniacal methanol), 50.9 mg of 2-(2-benzyl-5-ethoxy-2H-pyrazol-3-yl)-1H-benzimidazole-4-carboxylic acid are obtained in the form of a yellow lacquer.

2-Benzyl-5-ethoxy-2H-pyrazole-3-carboxaldehyde may be prepared in the following manner:

4 Å molecular sieves are added to a solution of 45.7 mg of (2-benzyl-5-ethoxy-2H-pyrazol-3-yl)methanol in 0.5 ml of dichloromethane, followed by addition of 43.1 mg of pyridinium chlorochromate. After 20 hours at a temperature in the region of 20°C, the reaction mixture is filtered through Celite. The insoluble material formed is rinsed with ethyl acetate and then with dichloromethane. The filtrate is washed with water. After separation of the phases by settling, the aqueous phase is re-extracted with dichloromethane. The organic phases are combined, dried over magnesium sulphate, filtered and then concentrated under reduced pressure. 21.6 mg of 2-benzyl-5-ethoxy-2H-pyrazole-3-carboxaldehyde are thus obtained in the form of a brown lacquer, the characteristics of which are as follows:

<sup>1</sup>H NMR (DMSO d<sub>6</sub>, 400 MHz): 1.35 ppm (triplet, 3H); 4.25 ppm (quartet, 2H); 5.30 ppm (singlet, 2H); 6.30 ppm (singlet, 1H); 7.25-7.40 ppm (multiplet, 5H); 9.72 ppm (singlet, 1H).

15

(2-Benzyl-5-ethoxy-2H-pyrazol-3-yl)methanol may be prepared in the following manner:

11.1 mg of lithium aluminium hydride are added to a solution of 76 mg of methyl 2-benzyl-5-ethoxy-2H-pyrazole-3-carboxylate in 0.75 ml of tetrahydrofuran, cooled to a temperature in the region of 0°C by an ice bath. After 3 hours at a temperature in the region of 0°C, 22.2 mg of lithium aluminium hydride are added and the reaction medium is allowed to warm to a temperature in the region of 20°C. After 30 minutes at a temperature in the region of 20°C, 10 ml of ice-cold water are added and the reaction mixture is then filtered through Celite. After separation of the phases by settling, the aqueous phase is extracted with ethyl acetate. The organic phases are combined, dried over magnesium sulphate and concentrated under reduced pressure. 45.7 mg of (2-benzyl-5-ethoxy-2H-pyrazol-3-yl)methanol are thus obtained in the form of a brown lacquer, the characteristics of which are as follows:

25

<sup>1</sup>H NMR (DMSO d<sub>6</sub>, 400 MHz): 1.35 ppm (triplet, 3H); 4.15 ppm (quartet, 2H); 4.30 ppm (doublet, 2H); 5.00 ppm (triplet, 1H); 5.08 ppm (singlet, 2H); 5.70 ppm (singlet, 1H); 7.20-7.40 ppm (multiplet, 5H).

30

Methyl 2-benzyl-5-ethoxy-2H-pyrazole-3-carboxylate may be prepared in the following manner:

5 mg of sodium iodide, 36 µl of bromoethane and 70 mg of potassium carbonate are added, at a temperature in the region of 20°C, to a solution of 100 mg of methyl 2-benzyl-5-hydroxy-2H-pyrazole-3-carboxylate in 1 ml of acetone. The reaction mixture is refluxed for 9 hours, cooled to a temperature

35

in the region of 20°C and filtered. The filtrate is concentrated under reduced pressure. 76 mg of methyl 2-benzyl-5-ethoxy-2H-pyrazole-3-carboxylate are thus obtained in the form of a solid, the characteristics of which are as follows:

- 5 <sup>1</sup>H NMR (DMSO d<sub>6</sub>, 400 MHz): 1.35 ppm (triplet, 3H); 3.50 ppm (singlet, 3H); 4.22 ppm (quartet, 2H); 5.22 ppm (singlet, 2H); 6.28 ppm (singlet, 1H); 7.20-7.40 ppm (multiplet, 5H).

Methyl 2-benzyl-5-hydroxy-2H-pyrazole-3-carboxylate may be prepared in the following manner:

- 10 1.72 ml of dimethylacetylene dicarboxylate are added, at a temperature in the region of 20°C, to a solution of 2.73 g of benzylhydrazine dihydrochloride in 45 ml of glacial acetic acid. The reaction mixture is refluxed for 3 hours, cooled to a temperature in the region of 20°C and then concentrated under reduced pressure. After filtering off the insoluble material formed, 252 mg of methyl 2-benzyl-5-hydroxy-2H-pyrazole-3-carboxylate are collected in the form of a white powder, the characteristics of  
15 which are as follows:

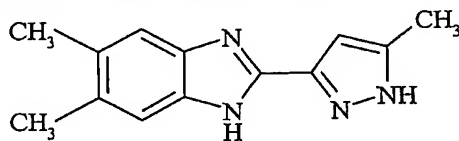
<sup>1</sup>H NMR (DMSO d<sub>6</sub>, 400 MHz): 3.76 ppm (singlet, 3H); 5.19 ppm (singlet, 2H); 5.85 ppm (singlet, 1H); 7.25-7.45 ppm (multiplet, 5H); 11.69 ppm (multiplet, 1H).

- 20 The filtrate may be purified by flash chromatography on 400 g of 20-45 µm silica (applied in a 25/75 ethyl acetate/cyclohexane mixture; eluant: 25/75 and then 40/60 ethyl acetate/cyclohexane) to give an additional batch of methyl 2-benzyl-5-hydroxy-2H-pyrazole-3-carboxylate in the form of a white powder.

25

#### EXAMPLE 20

##### 5,6-dimethyl-2-(5-methyl-2H-pyrazol-3-yl)-1H-benzimidazole



- 5,6-Dimethyl-2-(5-methyl-2H-pyrazol-3-yl)-1H-benzimidazole may be prepared by following the procedure described for the preparation of 5,6-dimethyl-2-(1H-indazol-3-yl)-1H-benzimidazole  
30 (Example 15):

Starting with 53.3 mg of 5-methyl-2H-pyrazole-3-carboxaldehyde, 65.9 mg of 4,5-dimethyl-1,2-phenylenediamine, and 92 mg of sodium metabisulphite, in 0.5 ml of ethanol and 1.5 ml of

dimethylformamide, and after purification by SPE (SCX phase, washing with methanol, extraction with 2N ammoniacal methanol) followed by a chromatography under pressure on silica, 20.8 mg of 5,6-dimethyl-2-(5-methyl-2H-pyrazol-3-yl)-1H-benzimidazole are obtained in the form of a white powder.

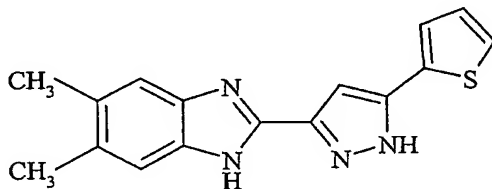
5

5-Methyl-2H-pyrazole-3-carboxaldehyde may be prepared from commercial ethyl 5-methyl-2H-pyrazole-3-carboxylate by following the procedure described for the preparation of 1H-indazole-3-carboxaldehyde, starting with methyl 3-indazolecarboxylate.

10

#### EXAMPLE 21

##### 5,6-dimethyl-2-(5-thiophen-2-yl-2H-pyrazol-3-yl)-1H-benzimidazole



5,6-Dimethyl-2-(5-thiophen-2-yl-2H-pyrazol-3-yl)-1H-benzimidazole may be prepared by following the procedure described for the preparation of 5,6-dimethyl-2-(1H-indazol-3-yl)-1H-benzimidazole

15 (Example 15):

Starting with 16.2 mg of 5-thiophen-2-yl-2H-pyrazole-3-carboxaldehyde, 12.4 mg of 4,5-dimethyl-1,2-phenylenediamine, and 17.3 mg of sodium metabisulphite, in 0.2 ml of ethanol and 0.6 ml of dimethylformamide, and after purification by SPE (SCX phase, washing with methanol, extraction with 2N ammoniacal methanol) followed by a chromatography under pressure on silica and a purification by LC-MS, 5,6-dimethyl-2-(5-thiophen-2-yl-2H-pyrazol-3-yl)-1H-benzimidazole is obtained in the form of a white powder.

20

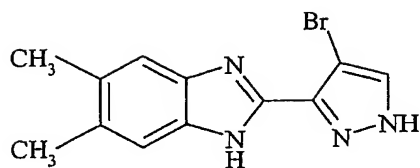
5-Thiophen-2-yl-2H-pyrazole-3-carboxaldehyde may be prepared from commercial ethyl 5-thiophen-2-yl-2H-pyrazole-3-carboxylate by following the procedure described for the preparation of 1H-indazole-3-carboxaldehyde starting with methyl 3-indazolecarboxylate.

25

#### EXAMPLE 22

##### 2-(4-bromo-2H-pyrazol-3-yl)-5,6-dimethyl-1H-benzimidazole

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2-(4-Bromo-2H-pyrazol-3-yl)-5,6-dimethyl-1H-benzimidazole may be prepared by following the procedure described for the preparation of 5,6-dimethyl-2-(1H-indazol-3-yl)-1H-benzimidazole (Example 15):

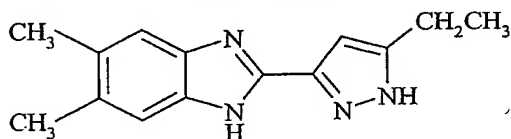
5

Starting with 100 mg of commercial 4-bromo-2H-pyrazole-3-carboxaldehyde, 77.8 mg of 4,5-dimethyl-1,2-phenylenediamine, and 108.6 mg of sodium metabisulphite, in 1 ml of ethanol and 2 ml of dimethylformamide, and after purification by SPE (SCX phase, washing with methanol, extraction with 2N ammoniacal methanol) followed by a chromatography under pressure on silica, 143.2 mg of 2-(4-bromo-2H-pyrazol-3-yl)-5,6-dimethyl-1H-benzimidazole are obtained in the form of a yellow foam.

10

#### EXAMPLE 23

##### 2-(5-ethyl-2H-pyrazol-3-yl)-5,6-dimethyl-1H-benzimidazole



15

2-(5-Ethyl-2H-pyrazol-3-yl)-5,6-dimethyl-1H-benzimidazole may be prepared by following the procedure described for the preparation of 5,6-dimethyl-2-(1H-indazol-3-yl)-1H-benzimidazole (Example 15):

20

Starting with 100 mg of 5-ethyl-2H-pyrazole-3-carboxaldehyde, 110 mg of 4,5-dimethyl-1,2-phenylenediamine, and 153 mg of sodium metabisulphite, in 1 ml of ethanol and 3 ml of dimethylformamide, and after purification by SPE (SCX phase, washing with methanol, extraction with 2N ammoniacal methanol) followed by a reverse-phase HPLC (5 mm C18 phase, dimensions 100x25 mm, flow rate 20 ml/min, elution gradient acetonitrile/0.07% TFA – water/0.07% TFA from 5-95 to 95-5 (v/v)), and desalification by SPE (SCX phase, washing with methanol, extraction with 2N ammoniacal methanol), 82 mg of 2-(5-ethyl-2H-pyrazol-3-yl)-5,6-dimethyl-1H-benzimidazole are obtained in the form of a beige-coloured powder, the characteristics of which are as follows:

25

30

<sup>1</sup>H NMR (DMSO d<sub>6</sub>, 300 MHz): 1.26 (t, J = 7 Hz: 3H); 2.31 (s: 6H); 2.70 (broad q, J = 7 Hz: 2H); 6.60 (broad s: 1H); 7.22 (mult: 1H); 7.36 (mult: 1H); 12.37 (mult: 1H); 12.92 (mult: 1H).

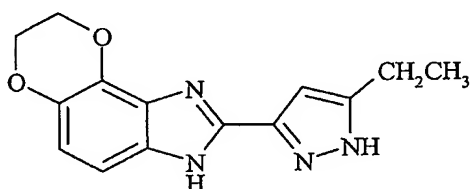
5-Ethyl-2H-pyrazole-3-carboxaldehyde may be prepared from ethyl 5-ethyl-2H-pyrazole-3-carboxylate by following the procedure described for the preparation of 1H-indazole-3-carboxaldehyde starting with methyl 3-indazolecarboxylate.

5

Ethyl 5-ethyl-2H-pyrazole-3-carboxylate may be prepared according to the general procedure in the following reference: Kunio Seki et al., Chem. Pharm. Bull., 32(4), 1568-1577 (1984).

#### EXAMPLE 24

##### 10 2-(5-ethyl-2H-pyrazol-3-yl)-4,5-ethylenedioxy-1H-benzimidazole



2-(5-Ethyl-2H-pyrazol-3-yl)-4,5-ethylenedioxy-1H-benzimidazole may be prepared by following the procedure described for the preparation of 5,6-dimethyl-2-(1H-indazol-3-yl)-1H-benzimidazole (Example 15):

15

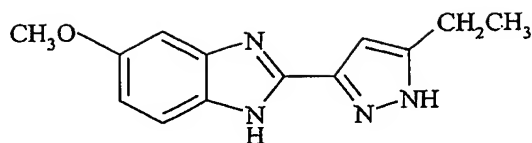
Starting with 100 mg of 5-ethyl-2H-pyrazole-3-carboxaldehyde, 134 mg of 3,4-ethylenedioxy-1,2-phenylenediamine, and 153 mg of sodium metabisulphite, in 1 ml of ethanol and 3 ml of dimethylformamide, and after purification by SPE (SCX phase, washing with methanol, extraction with 2N ammoniacal methanol) followed by a reverse-phase HPLC (5 mm, C18 phase, dimensions 20 100x25 mm, flow rate 20 ml/min, elution gradient acetonitrile/0.07% TFA – water/0.07% TFA from 5-95 to 95-5 (v/v)), and desalification by SPE (SCX phase, washing with methanol, extraction with 2N ammoniacal methanol), 60 mg of 2-(5-ethyl-2H-pyrazol-3-yl)-4,5-ethylenedioxy-1H-benzimidazole are obtained in the form of a brown lacquer, the characteristics of which are as follows:

25 <sup>1</sup>H NMR (DMSO d<sub>6</sub>, 300 MHz): 1.27 (t, J = 7 Hz: 3H); 2.70 (broad q, J = 7 Hz: 2H); from 4.20 to 4.45 (mt: 4H); 6.61 (broad s: 1H); 6.72 (d, J = 8 Hz: 1H); 6.88 (broad d, J = 8 Hz: 1H); 12.50 (mult: 1H); 12.94 (mult: 1H).

#### EXAMPLE 25

##### 30 2-(5-ethyl-2H-pyrazol-3-yl)-5-methoxy-1H-benzimidazole

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2-(5-Ethyl-2H-pyrazol-3-yl)-5-methoxy-1H-benzimidazole may be prepared by following the procedure described for the preparation of 5,6-dimethyl-2-(1H-indazol-3-yl)-1H-benzimidazole (Example 15):

5

Starting with 100 mg of 5-ethyl-2H-pyrazole-3-carboxaldehyde, 138 mg of 4-methoxy-1,2-phenylenediamine, and 153 mg of sodium metabisulphite, in 1 ml of ethanol and 3 ml of dimethylformamide, and after purification by SPE (SCX phase, washing with methanol, extraction with 2N ammoniacal methanol) followed by a reverse-phase HPLC (5 mm C18 phase, dimensions 100x25 mm, flow rate 20 ml/min, elution gradient: acetonitrile/0.07% TFA – water/0.07% TFA from 5-95 to 95-5 (v/v)), and desalification by SPE (SCX phase, washing with methanol, extraction with 2N ammoniacal methanol), 61 mg of 2-(5-ethyl-2H-pyrazol-3-yl)-5-methoxy-1H-benzimidazole are obtained in the form of a brown lacquer, the characteristics of which are as follows:

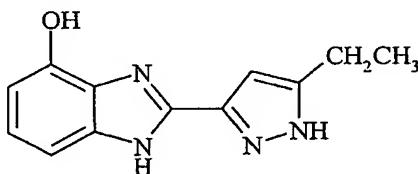
10

<sup>1</sup>H NMR (DMSO d<sub>6</sub> with addition of a few drops of CD<sub>3</sub>COOD, 300 MHz): 1.26 (t, J = 7 Hz: 3H); 2.70 (q, J = 7 Hz: 2H); 3.79 (s: 3H); 6.61 (s: 1H); 6.81 (dd, J = 8.5 and 2.5 Hz: 1H); 7.03 (broad s: 1H); 7.42 (d, J = 8.5 Hz: 1H).

20

#### EXAMPLE 26

##### 2-(5-ethyl-2H-pyrazol-3-yl)-4-hydroxy-1H-benzimidazole



2-(5-Ethyl-2H-pyrazol-3-yl)-4-hydroxy-1H-benzimidazole may be prepared by following the procedure described for the preparation of 5,6-dimethyl-2-(1H-indazol-3-yl)-1H-benzimidazole (Example 15):

25

Starting with 100 mg of 5-ethyl-2H-pyrazole-3-carboxaldehyde, 100 mg of 2,3-diaminophenol, and 153 mg of sodium metabisulphite, in 1 ml of ethanol and 3 ml of dimethylformamide, and after purification by SPE (SCX phase, washing with methanol, extraction with 2N ammoniacal methanol) followed by a reverse-phase HPLC (5 mm, C18 phase, dimensions: 100x25 mm, flow rate 20 ml/min, elution gradient: acetonitrile/0.07% TFA – water/0.07% TFA from 5-95 to 95-5 (v/v)), and desalification by

30

SPE (SCX phase, washing with methanol, extraction with 2N ammoniacal methanol), 16 mg of



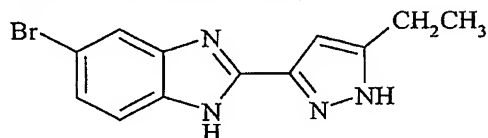
-297-

2-(5-ethyl-2H-pyrazol-3-yl)-4-hydroxy-1H-benzimidazole are obtained in the form of a brown lacquer, the characteristics of which are as follows:

- <sup>1</sup>H NMR (DMSO d<sub>6</sub> with addition of a few drops of CD<sub>3</sub>COOD, 300 MHz): 1.26 (t, J = 7 Hz: 3H);  
5 2.70 (q, J = 7 Hz: 2H); 6.55 (t, J = 4.5 Hz: 1H); 6.66 (s: 1H); 6.96 (broad d, J = 4.5 Hz: 2H).

#### EXAMPLE 27

##### 2-(5-ethyl-2H-pyrazol-3-yl)-5-bromo-1H-benzimidazole



- 10 2-(5-Ethyl-2H-pyrazol-3-yl)-5-bromo-1H-benzimidazole may be prepared by following the procedure described for the preparation of 5,6-dimethyl-2-(1H-indazol-3-yl)-1H-benzimidazole (Example 15):

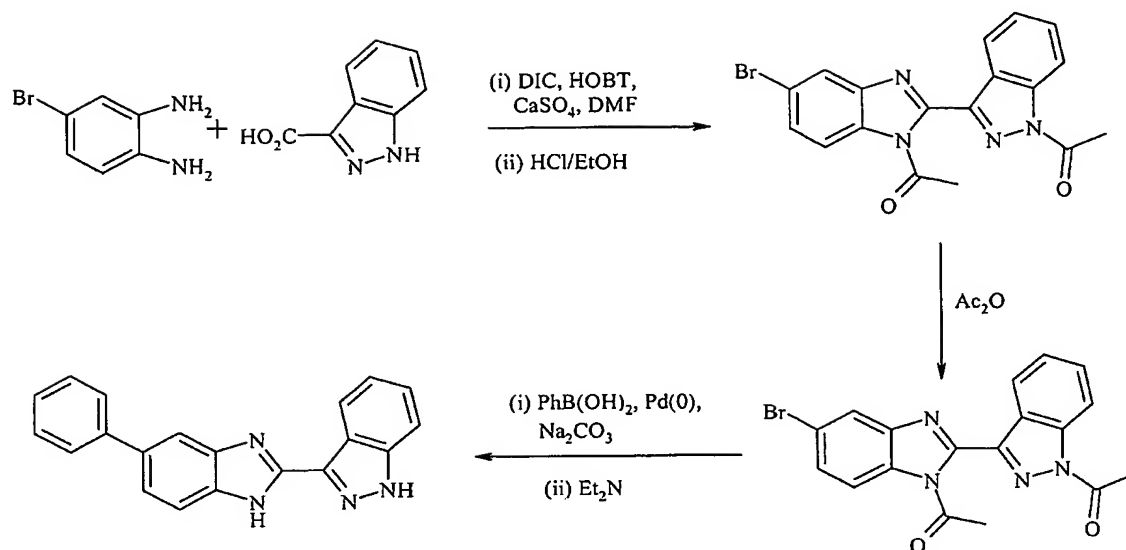
- Starting with 20 mg of 5-ethyl-2H-pyrazole-3-carboxaldehyde, 30 mg of 4-bromo-1,2-phenylenediamine and 30 mg of sodium metabisulphite, in 1 ml of ethanol and 2 ml of  
15 dimethylformamide, and after purification by SPE (SCX phase, washing with methanol, extraction with 2N ammoniacal methanol) followed by a reverse-phase HPLC (5 mm C18 phase, dimensions: 100x25 mm, flow rate 20 ml/min, elution gradient: acetonitrile/0.07% TFA – water/0.07% TFA from 5-95 to 95-5 (v/v)), and desalification by SPE (SCX phase, washing with methanol, extraction with 2N ammoniacal methanol), 21 mg of 2-(5-ethyl-2H-pyrazol-3-yl)-5-bromo-1H-benzimidazole are obtained  
20 in the form of a yellow powder, the characteristics of which are as follows:

<sup>1</sup>H NMR (DMSO d<sub>6</sub>, 300 MHz): 1.28 (t, J = 7 Hz: 3H); 2.71 (q, J = 7 Hz: 2H); 6.67 (s: 1H); 7.30 (dd, J = 8.5 and 2.5 Hz: 1H); 7.49 (mt: 1H); 7.712 (broad s: 1H); from 12.5 to 13.5 (broad mult: 2H).

25

The products of formula (I) of the present application can also be prepared according to the following process:

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The products of Examples 97 to 145 of the present application represented in the TABLE 3 below can be prepared according to the schemes indicated above and in particular according to the procedures indicated below.

5

#### EXAMPLE 97

##### 3-(6-phenyl-1H-benzimidazol-2-yl)-2H-indazole

Step 1 : Synthesis of 3-(6-bromo-1H-benzimidazol-2-yl)-2H-indazole (other preparation of example 18)

- 4.25 g of 1-hydroxybenzotriazole and 4.3 g of calcium sulphate are added at ambient temperature to a solution of 4.6 g of indazole-3-carboxylic acid in 50 ml of dimethylformamide. The reaction mixture is cooled to approximately  $0^\circ\text{C}$  and then 4.9 ml of N,N-diisopropylcarbodiimide are slowly added. After stirring for 2 hours at ambient temperature, 5.9 g of 4-bromo-o-phenylenediamine are added. After stirring for 60 hours at ambient temperature, the reaction mixture is concentrated to dryness under reduced pressure. The brown oil obtained is taken up in 50 ml of water and extracted 3 times with 50 ml of ethyl acetate. The organic phases are combined, dried over magnesium sulphate and then concentrated to dryness under reduced pressure. 18 g of a brown oil are thus obtained, which oil is taken up in 100 ml of a 20% solution of hydrochloric acid in ethanol. The mixture is brought to reflux for 4 hours and then concentrated to dryness, the brown oil obtained is taken up in 20 ml of water, and an aqueous ammonia solution is run in until a pH of the mixture of about 8-9 is obtained. The aqueous phase is then extracted 3 times with 30 ml of ethyl acetate and the organic phases are combined, dried over magnesium sulphate and concentrated to dryness under reduced pressure. After purification by chromatography under pressure on silica (eluent water/acetonitrile), 5 g of 3-(6-bromo-1H-benzimidazol-2-yl)-2H-indazole are thus obtained.

IR spectrum (KBr): characteristic bands at 1621, 1570, 1441, 1344, 1324, 1273, 1239, 1135, 1042, 914, 804, 774 and 746  $\text{cm}^{-1}$

Step 2 : Synthesis of 1-[2-(1-acetyl-1H-indazol-3-yl)-5-bromobenzimidazol-1-yl]ethanone

- 5 g of 3-(6-bromo-1H-benzimidazol-2-yl)-2H-indazole are charged to a solution of 40 ml of acetic anhydride and 40 ml of pyridine. The mixture is brought to reflux for 4 hours and then concentrated to dryness after returning to ambient temperature. The brown solid obtained is taken up in 50 ml of ethyl acetate and washed with 50 ml of a saturated sodium hydrogencarbonate solution until a pH of 7-8 is obtained. The organic phase is dried over magnesium sulphate, filtered and then concentrated to dryness under reduced pressure. The light brown solid obtained is triturated in 20 ml of ethyl acetate and then filtered off on a sintered glass funnel. 1.5 g of the compound 1-[2-(1-acetyl-1H-indazol-3-yl)-5-bromobenzimidazol-1-yl]ethanone are thus obtained. A second crop is obtained by chromatographing the filtrate obtained above under pressure on silica (eluent cyclohexane/ethyl acetate), i.e. 1.3 g of the same compound.

- Characteristics of the compound:

$^1\text{H}$  NMR spectrum (300 MHz,  $(\text{CD}_3)_2\text{SO}-d_6$ ,  $\delta$  in ppm).

The mixture of the two positional isomers in the proportions 50/50 is observed.

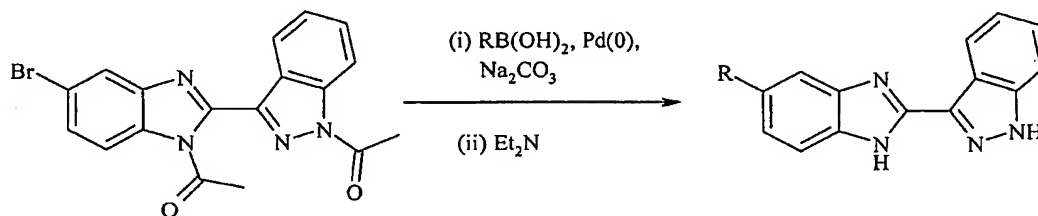
- 2.61 and 2.62 (2 s, 3H in all); 2.80 (s, 3H); 7.62 (broad t,  $J = 7.5$  Hz, 1H); 7.68 and 7.71 (2 dd,  $J = 9$  and 2 Hz, 1H in all); 7.80 (ddd,  $J = 8.5$ , 7.5 and 0.5 Hz, 1H); 7.91 and 8.01 (2 d,  $J = 9$  Hz, 1H); 8.18 and 8.20 (2 d,  $J = 2$  Hz, 1H in all); 8.27 and 8.30 (2 d,  $J = 7.5$  Hz, 1H in all); 8.46 (d,  $J = 8.5$  Hz, 1H)

IR spectrum (KBr): characteristic bands at 1727, 1610, 1450, 1405, 1374, 1326, 1290, 1198, 1176, 964 and 760  $\text{cm}^{-1}$

- Step 3 : Synthesis of 3-(6-phenyl-1H-benzimidazol-2-yl)-2H-indazole

- 40 mg of sodium carbonate, 7 mg of dihydrogendichlorobis(di-tert-butylphosphonite- $\kappa\text{P}$ )palladate(2-) (POPd[0]) and 46 mg of phenylboronic acid are added under an argon atmosphere to a solution of 50 mg of 1-[2-(1-acetyl-1H-indazol-3-yl)-5-bromobenzimidazol-1-yl]ethanone in 800  $\mu\text{l}$  of anhydrous tetrahydrofuran. The reaction mixture is brought to reflux for 3 hours and then cooled to ambient temperature. The mixture is then diluted with 3 ml of ethyl acetate and then washed with 2 times 2 ml of water. The organic phase is dried over magnesium sulphate and then concentrated to dryness under reduced pressure. 48 mg of a brown solid are obtained, which solid is dissolved in 500  $\mu\text{l}$  of tetrahydrofuran, to which 500  $\mu\text{l}$  of diethylamine are added. The reaction mixture is heated at 60°C for 4 hours and then allowed to return to ambient temperature. The mixture is then concentrated to dryness and then the brown solid obtained is purified by LC-MS to produce 12.5 mg of 3-(6-phenyl-1H-benzimidazol-2-yl)-2H-indazole (6); analytical retention time 3.10, MS 311  $[\text{M}+\text{H}]^+$ .

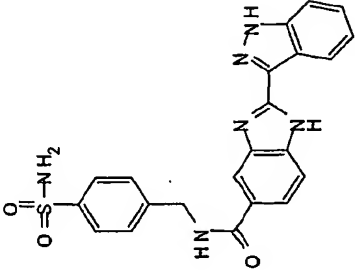
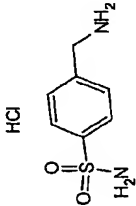
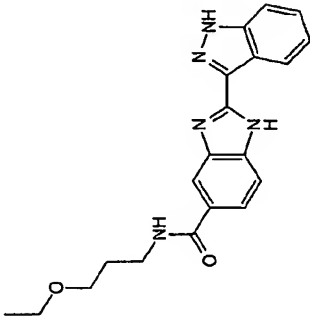

The products of formula (I) of the present application and in particular examples 98 to 145 can be prepared according to the following process :



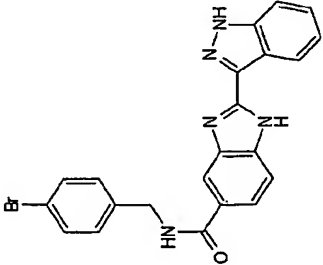
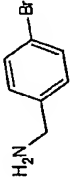
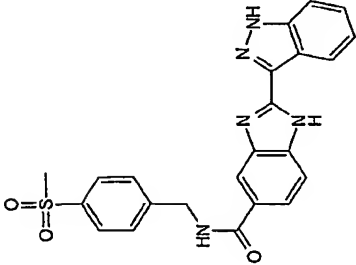
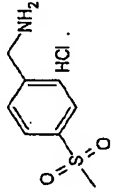
The synthesis of examples 98 to 145 is carried out in a similar way to the synthesis of 3-(6-phenyl-1H-benzimidazol-2-yl)-2H-indazole (example 97) but replacing phenylboronic acid with boronic acids of formula  $\text{RB(OH)}_2$ .

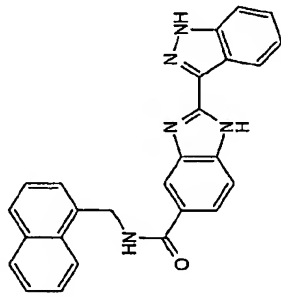
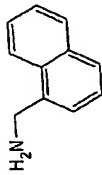
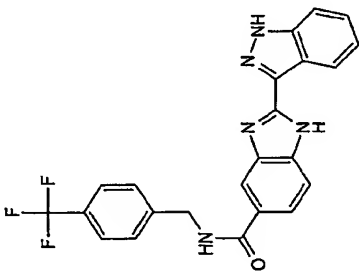
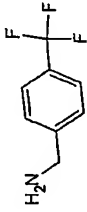
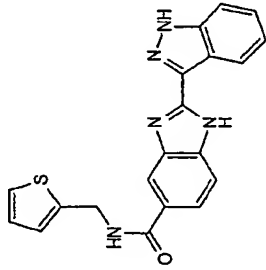

Products of formula (I) of the present application which constitute Examples 28 to 96 and 146 to 180 of the present application are represented in Table 3: these products can be prepared according to the schemes indicated above and in particular as indicated above for the product of Example 1.

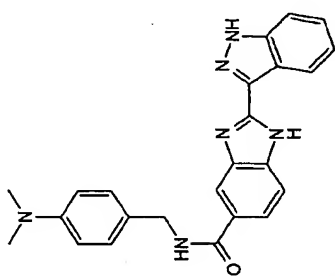
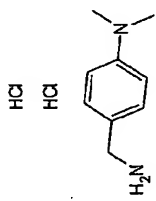
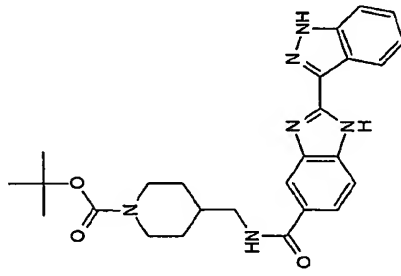
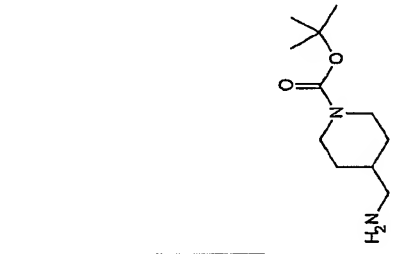
TABLE 3

Example number	STRUCTURE	RNH <sub>2</sub> or RB(OH) <sub>2</sub>	Molecular Formula	MW	MS Characteristic Method	retention time (minutes)	Nomenclature
28			C22H18N6O3S	446.49	447 [M+H] <sup>+</sup>	2.77	2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid 2,4- dichloro-benzylamide
29			C20H21N5O2	363.42	364 [M+H] <sup>+</sup>	2.8	2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid (3- ethoxy-propyl)-amide

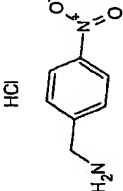
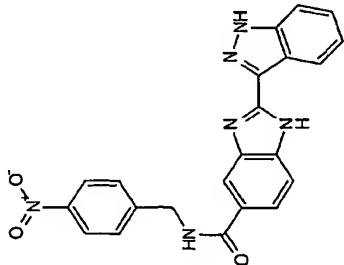
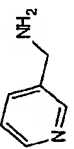
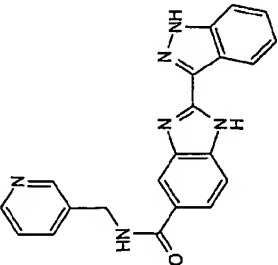
- 302 -

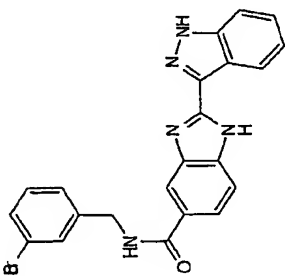
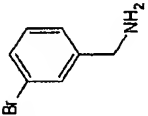
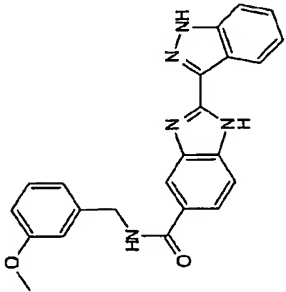
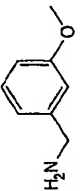
30			C22H16BrN5O	446.31	447	[M+H] <sup>+</sup>	3.35	2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid 4- bromo-benzylamide
31			C23H19N5O3S	445.50	446	[M+H] <sup>+</sup>	2.81	2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid 4- methanesulfonyl- benzylamide

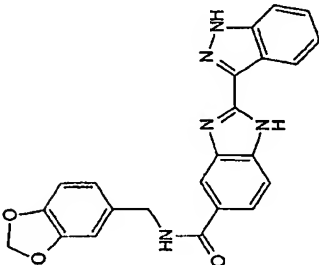
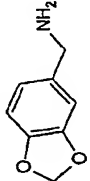
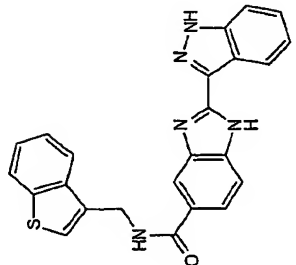
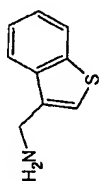
32			C26H19N5O	417.47	418	[M+H] <sup>+</sup>	3.38	2-(1H-Indazol-3-yl)- 1H-benzotriazole- 5-carboxylic acid (naphthalen-1- ylmethyl)-amide
33			C23H16F3N5O	435.41	436	[M+H] <sup>+</sup>	3.41	2-(1H-Indazol-3-yl)- 1H-benzotriazole- 5-carboxylic acid 4- trifluoromethyl- benzylamide
34			C20H15N5OS	373.44	374	[M+H] <sup>+</sup>	3.01	2-(1H-Indazol-3-yl)- 1H-benzotriazole- 5-carboxylic acid (thiophen-2- ylmethyl)-amide

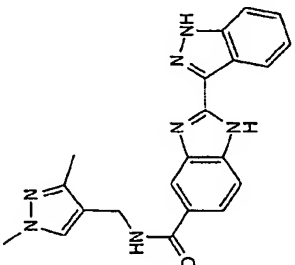
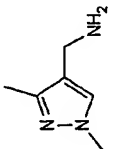
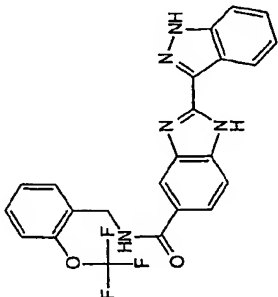
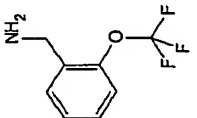
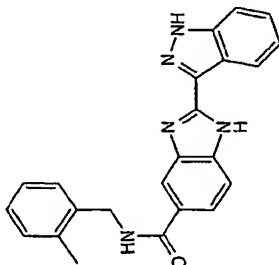
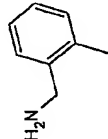
35			C <sub>24</sub> H <sub>22</sub> N <sub>6</sub> O	410.48	411	[M+H] <sup>+</sup>	2.49	2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid 4- dimethylamino- benzylamide
36			C <sub>26</sub> H <sub>30</sub> N <sub>6</sub> O <sub>3</sub>	474.56	475	[M+H] <sup>+</sup>	3.31	4-((2-(1H-Indazol-3- yl)-1H- benzimidazole-5- carbonyl)-amino)- methyl)-piperidine-1- carboxylic acid tert- butyl ester

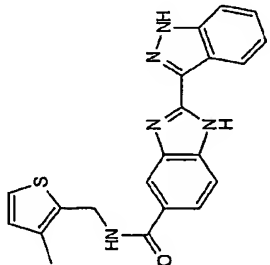
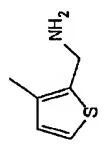
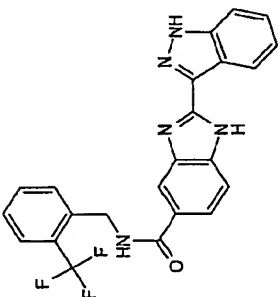
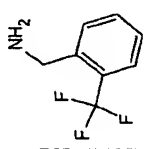


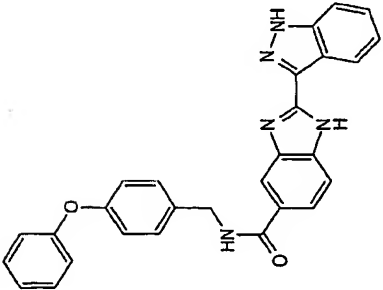
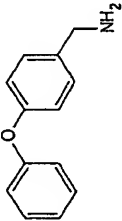
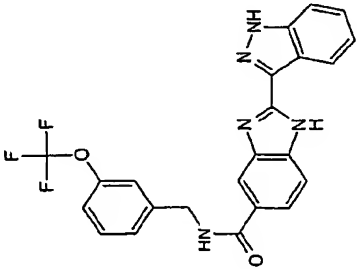
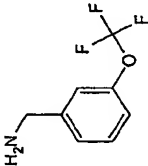
2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid 4- nitro-benzylamide	3.14	[M+H] <sup>+</sup>	413	412.41	C22H16N6O3			37
2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid (pyridin-3-ylmethyl)- amide	2.39	[M+H] <sup>+</sup>	369	368.40	C21H16N6O			38

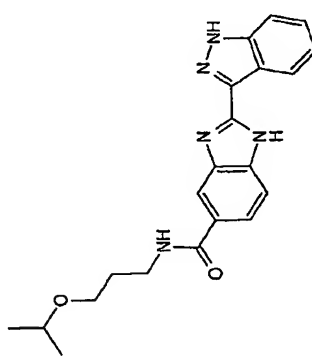

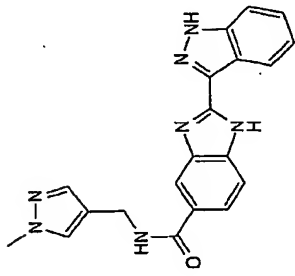
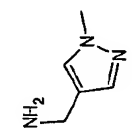
39				C22H16BrN5O	446.31	447	[M+H] <sup>+</sup>	3.36	2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid 3- bromo-benzylamide
40				C23H19N5O2	397.44	398	[M+H] <sup>+</sup>	3.1	2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid 3- methoxy- benzylamide

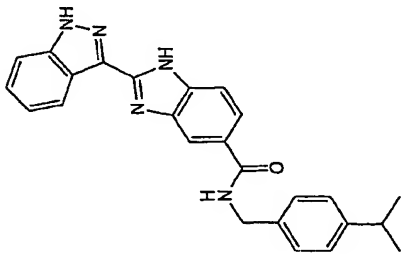
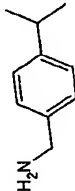
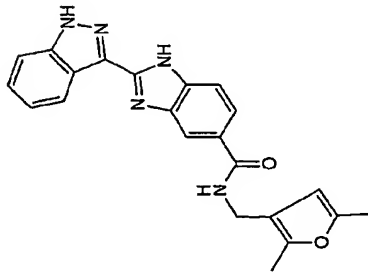
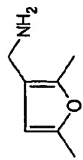
41			C23H17N5O3	411.42	412	[M+H] <sup>+</sup>	3.07	2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid (benzo[1,3]dioxol-5- ylmethyl)-amide
42			C24H17N5OS	423.50	424	[M+H] <sup>+</sup>	3.42	2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid (benzo[b]thiophen-3- ylmethyl)-amide

43				C <sub>21</sub> H <sub>19</sub> N <sub>7</sub> O	385.43	386	[M+H] <sup>+</sup>	2.59	2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid (1,3-dimethyl-1H- pyrazol-4-ylmethyl)- amide
44				C <sub>23</sub> H <sub>16</sub> F <sub>3</sub> N <sub>5</sub> O <sub>2</sub>	451.41	452	[M+H] <sup>+</sup>	3.44	2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid 2- trifluoromethoxy- benzylamide
45				C <sub>23</sub> H <sub>19</sub> N <sub>5</sub> O	381.44	382	[M+H] <sup>+</sup>	3.21	2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid 2- methyl-benzylamide

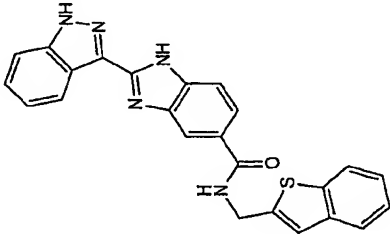
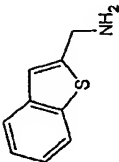
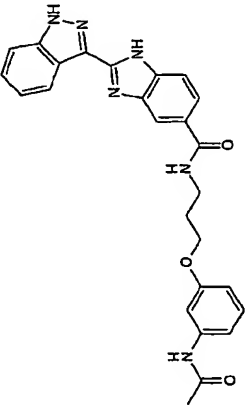
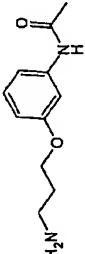
46			C <sub>21</sub> H <sub>17</sub> N <sub>5</sub> O <sub>2</sub> S	387.46	388	[M+H] <sup>+</sup>	3.16	2-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid (3-methyl-2-(thiophen-2-ylmethyl)-amide)
47			C <sub>23</sub> H <sub>16</sub> F <sub>3</sub> N <sub>5</sub> O	435.41	436	[M+H] <sup>+</sup>	3.38	2-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid 2-(trifluoromethyl-benzyl)amide

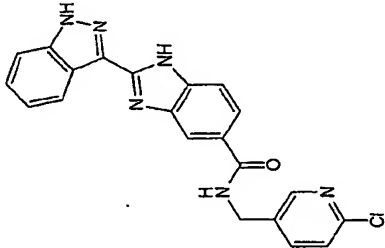
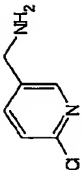
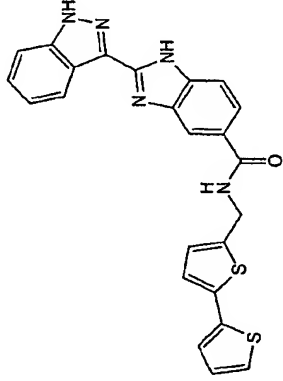
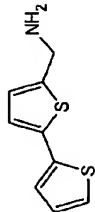
48					C28H21N5O2	459.51	460	[M+H] <sup>+</sup>	3.56	2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid 4- phenoxy- benzylamide
49					C23H16F3N5O2	451.41	452	[M+H] <sup>+</sup>	3.46	2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid 3- trifluoromethoxy- benzylamide

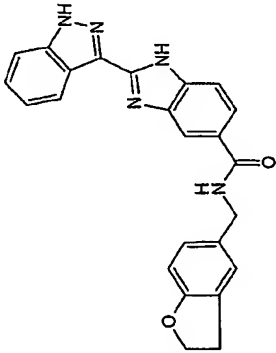
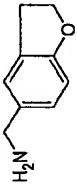
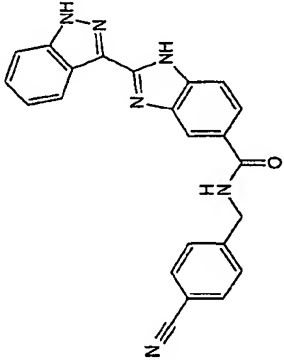
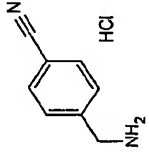
50			C21H23N5O2	377.45	378	[M+H] <sup>+</sup>	2.94	2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid (3- isopropoxy-propyl)- amide
51			C20H17N7O	371.40	372	[M+H] <sup>+</sup>	2.56	2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid (1- methyl-1H-pyrazol-4- ylmethyl)-amide

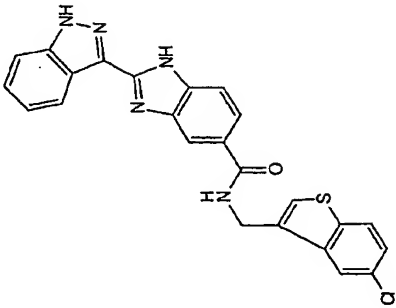
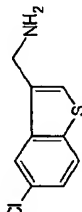
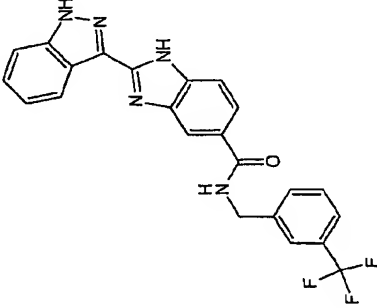
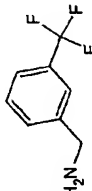
52			C25H23N5O	409.49	410	[M+H] <sup>+</sup>	3.51	2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid 4- isopropyl- benzylamide
53			C22H19N5O2	385.43	386	[M+H] <sup>+</sup>	3.19	2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid (2,5-dimethyl-furan- 3-ylmethyl)-amide

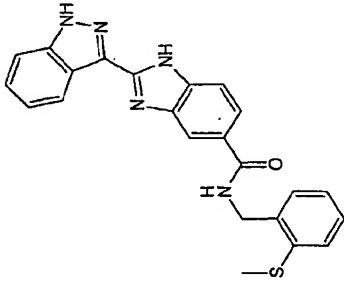
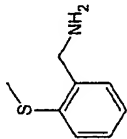
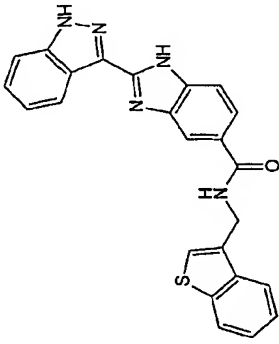
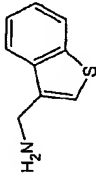


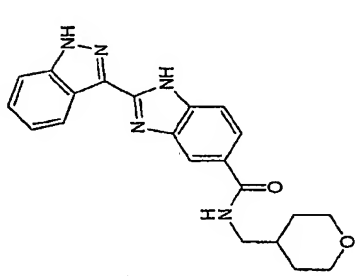
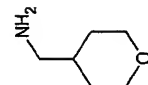
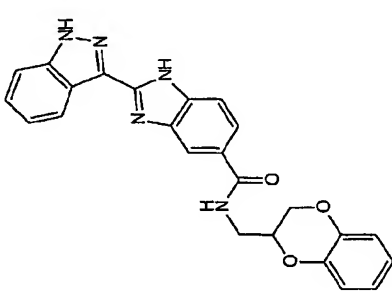
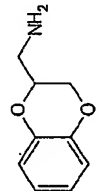
54			C <sub>24</sub> H <sub>17</sub> N <sub>5</sub> O <sub>3</sub>	423.50	424	[M+H] <sup>+</sup>	3.38	2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid (benzo[b]thiophen-2- ylmethyl)-amide
55			C <sub>26</sub> H <sub>24</sub> N <sub>6</sub> O <sub>3</sub>	468.52	469	[M+H] <sup>+</sup>	2.92	2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid [3- (3-acetylamino- phenoxy)-propyl]- amide

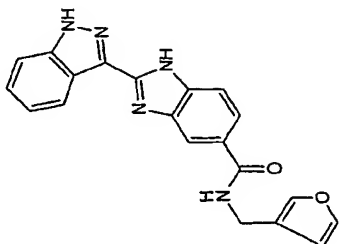

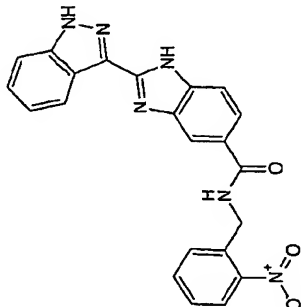
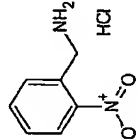
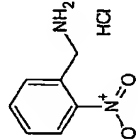
		C <sub>21</sub> H <sub>15</sub> ClN <sub>6</sub> O	402.84	403	[M+H] <sup>+</sup>	2.92	2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid (6- chloro-pyridin-3- ylmethyl)-amide
		C <sub>24</sub> H <sub>17</sub> N <sub>5</sub> O <sub>2</sub> S <sub>2</sub>	455.56	456	[M+H] <sup>+</sup>	3.47	2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid ([2,2']bithiophenyl-5- ylmethyl)-amide

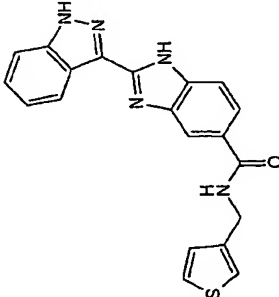
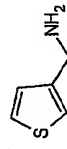
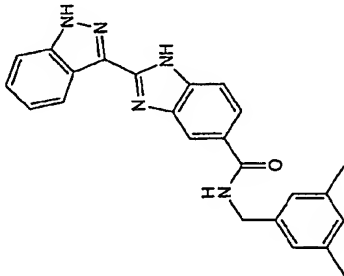
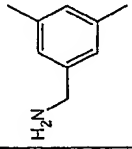
58			C <sub>24</sub> H <sub>19</sub> N <sub>5</sub> O <sub>2</sub>	409.45	410	[M+H] <sup>+</sup>	3.07	2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid (2,3-dihydro- benzofuran-5- ylmethyl)-amide
59			C <sub>23</sub> H <sub>16</sub> N <sub>6</sub> O	392.42	393	[M+H] <sup>+</sup>	3.03	2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid 4- cyano-benzylamide

<p>60</p> 		<p>C<sub>24</sub>H<sub>16</sub>ClN<sub>5</sub>O<sub>2</sub>S</p>	<p>457.94</p>	<p>458</p>	<p>[M+H]<sup>+</sup></p>	<p>3.55</p>	<p>2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid (5- chloro- benzo[b]thiophen-3- ylmethyl)-amide</p>
<p>61</p> 		<p>C<sub>23</sub>H<sub>16</sub>F<sub>3</sub>N<sub>5</sub>O</p>	<p>435.41</p>	<p>436</p>	<p>[M+H]<sup>+</sup></p>	<p>3.41</p>	<p>2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid 3- trifluoromethyl- benzylamide</p>

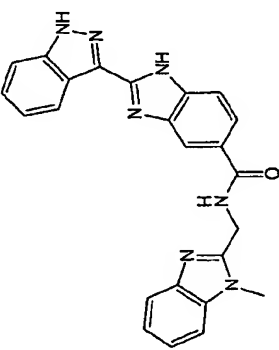
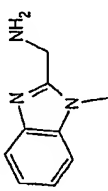
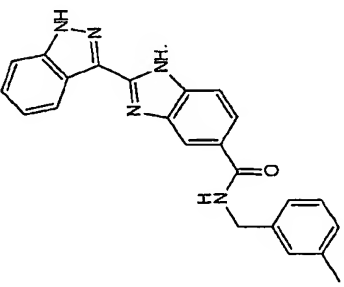
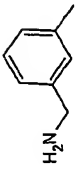
		C23H19N5OS	413.50	414	[M+H] <sup>+</sup>	3.26	2-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid 2-methylsulfanylmethylbenzylamide
		C24H17N5OS	423.50	424	[M+H] <sup>+</sup>	3.38	2-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid (benzo[b]thiophen-3-ylmethyl)-amide

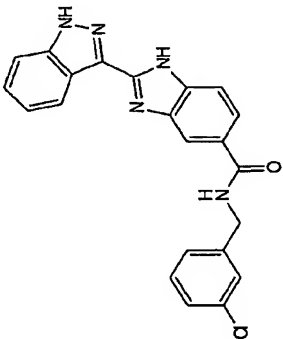
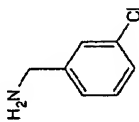
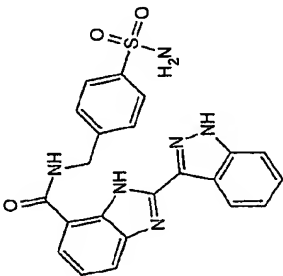
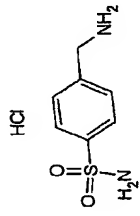
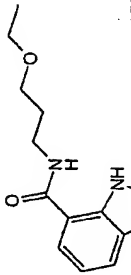
64			C <sub>21</sub> H <sub>21</sub> N <sub>5</sub> O <sub>2</sub>	375.43	376	[M+H] <sup>+</sup>	2.65	2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid (tetrahydro-pyran-4- ylmethyl)-amide
65			C <sub>24</sub> H <sub>19</sub> N <sub>5</sub> O <sub>3</sub>	425.45	426	[M+H] <sup>+</sup>	3.28	2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid (2,3-dihydro- benzo[1,4]dioxin-2- ylmethyl)-amide

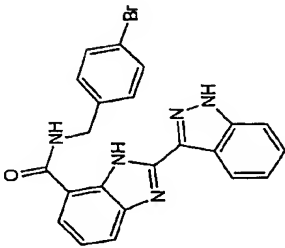
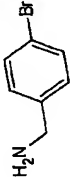
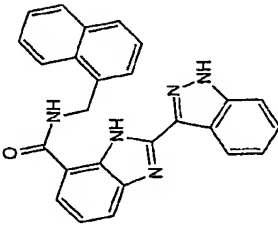
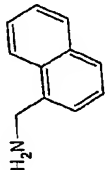
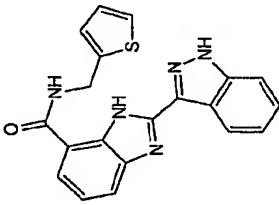
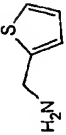
66				C <sub>20</sub> H <sub>15</sub> N <sub>5</sub> O <sub>2</sub>	357.37	358	[M+H] <sup>+</sup>	2.92	2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid (furan-3-ylmethyl)- amide
67				C <sub>22</sub> H <sub>16</sub> N <sub>6</sub> O <sub>3</sub>	412.41	413	[M+H] <sup>+</sup>	3.14	2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid 2- nitro-benzylamide

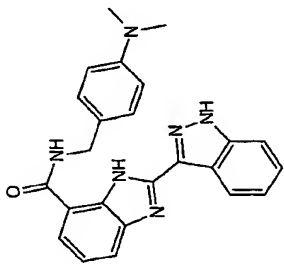
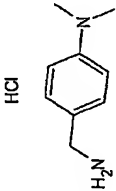
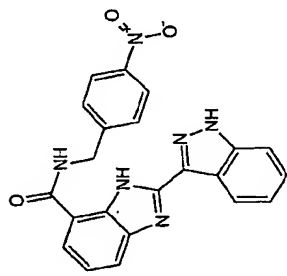
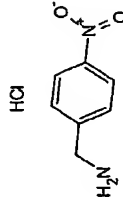
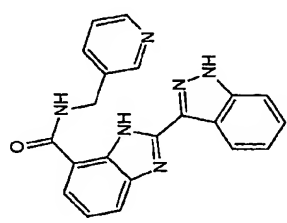
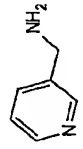
68				C20H15N5OS	373.44	374	[M+H] <sup>+</sup>	3.03	2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid (thiophen-3- ylmethyl)-amide
69				C24H21N5O	395.47	396	[M+H] <sup>+</sup>	3.37	2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid 3,5- dimethyl- benzylamide

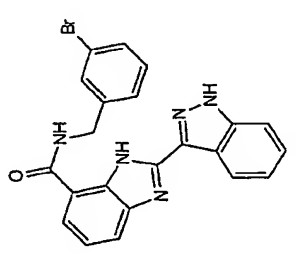
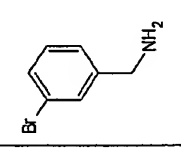
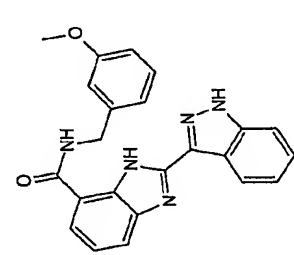
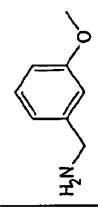
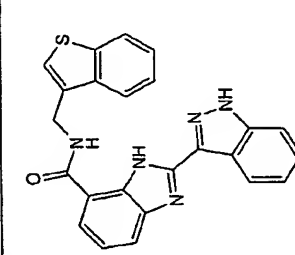
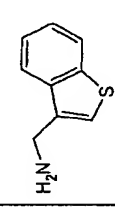


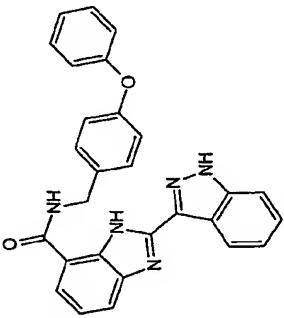
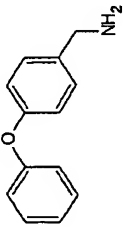
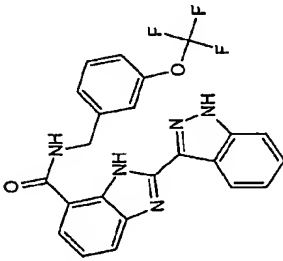
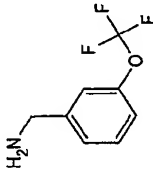
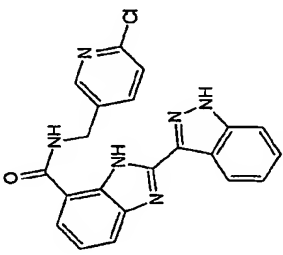
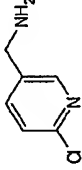
70			C <sub>24</sub> H <sub>19</sub> N <sub>7</sub> O	421.46	422	[M+H] <sup>+</sup>	2.61	2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid (1- methyl-1H- benzimidazol-2- ylmethyl)-amide
71			C <sub>23</sub> H <sub>19</sub> N <sub>5</sub> O	381.44	382	[M+H] <sup>+</sup>	3.24	2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid 3- methyl-benzylamide

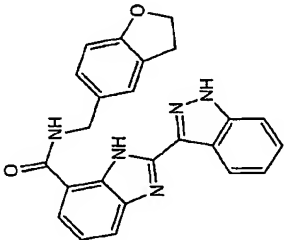
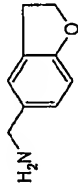
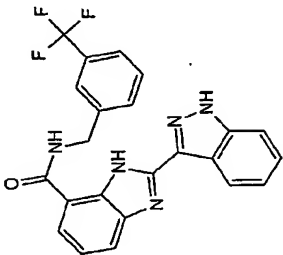
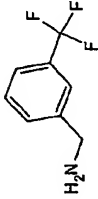
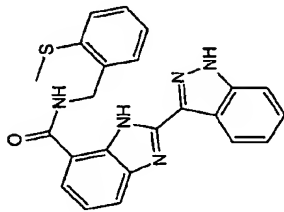
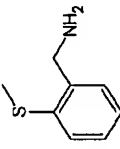
72				C22H16ClN5O	401.86	402	[M+H] <sup>+</sup>	3.29	2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid 3- chloro-benzylamide
73				C22H18N6O3S	446.49	447	[M+H] <sup>+</sup>	3.07	2-(1H-Indazol-3-yl)- 3H-benzimidazole- 4-carboxylic acid 4- sulfamoyl- benzylamide
74				C20H21N5O2	363.42	364	[M+H] <sup>+</sup>	3.45	2-(1H-Indazol-3-yl)- 3H-benzimidazole- 4-carboxylic acid (3- ethoxy-propyl)-amide

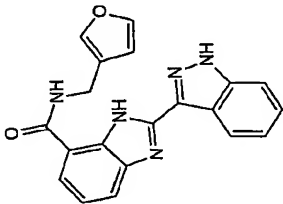
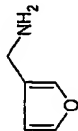
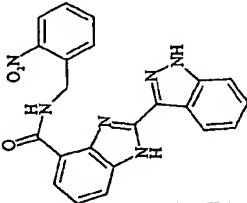
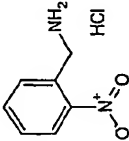
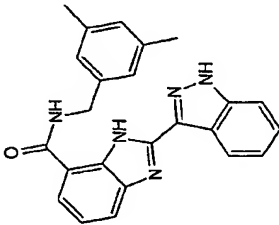
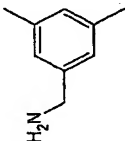
75			C22H16BrN5O	446.31	447	[M+H] <sup>+</sup>	4.38	2-(1H-Indazol-3-yl)- 3H-benzimidazole- 4-carboxylic acid 4- bromo-benzylamide
76			C26H19N5O	417.47	418	[M+H] <sup>+</sup>	4.4	2-(1H-Indazol-3-yl)- 3H-benzimidazole- 4-carboxylic acid (naphthalen-1- ylmethyl)-amide
77			C20H15N5OS	373.44	374	[M+H] <sup>+</sup>	3.93	2-(1H-Indazol-3-yl)- 3H-benzimidazole- 4-carboxylic acid (thiophen-2- ylmethyl)-amide

78		 HCl HCl	C24H22N6O	410.48	411	[M+H] <sup>+</sup>	2.93	2-(1H-Indazol-3-yl)- 3H-benzimidazole- 4-carboxylic acid 4- dimethylamino- benzylamide
79		 HCl	C22H16N6O3	412.41	413	[M+H] <sup>+</sup>	3.87	2-(1H-Indazol-3-yl)- 3H-benzimidazole- 4-carboxylic acid 4- nitro-benzylamide
80			C21H16N6O	368.40	369	[M+H] <sup>+</sup>	2.4	2-(1H-Indazol-3-yl)- 3H-benzimidazole- 4-carboxylic acid (pyridin-3-ylmethyl)- amide

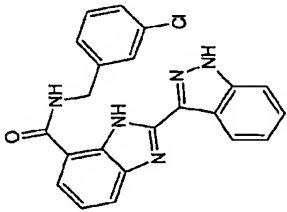
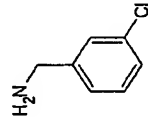
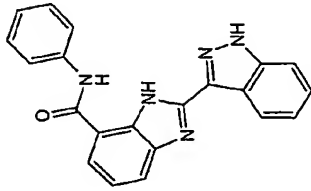

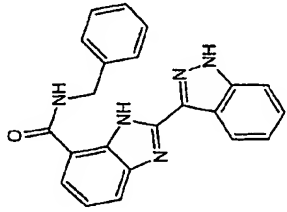
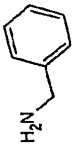
81			C22H16BrN5O	446.31	447	[M+H] <sup>+</sup>	4.18	2-(1H-Indazol-3-yl)- 3H-benzimidazole- 4-carboxylic acid 3- bromo-benzylamide
82			C23H19N5O2	397.44	398	[M+H] <sup>+</sup>	3.95	2-(1H-Indazol-3-yl)- 3H-benzimidazole- 4-carboxylic acid 3- methoxy- benzylamide
83			C24H17N5OS	423.50	424	[M+H] <sup>+</sup>	4.68	2-(1H-Indazol-3-yl)- 3H-benzimidazole- 4-carboxylic acid (benzo[b]thiophen-3- ylmethyl)-amide

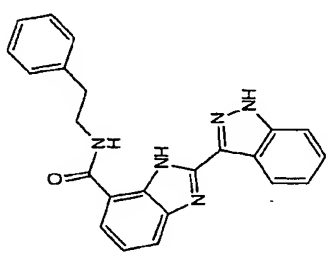

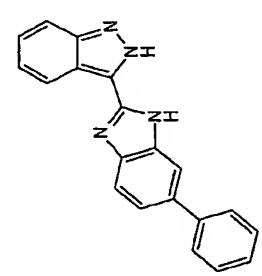
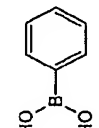
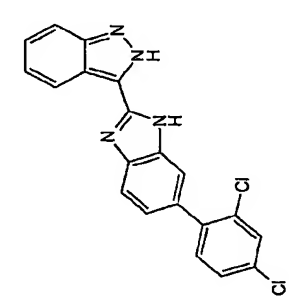
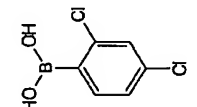
84			C <sub>28</sub> H <sub>21</sub> N <sub>5</sub> O <sub>2</sub>	459.51	460	[M+H] <sup>+</sup>	4.55	2-(1H-Indazol-3-yl)- 3H-benzimidazole- 4-carboxylic acid 4- phenoxy- benzylamide
85			C <sub>23</sub> H <sub>16</sub> F <sub>3</sub> N <sub>5</sub> O <sub>2</sub>	451.41	452	[M+H] <sup>+</sup>	4.43	2-(1H-Indazol-3-yl)- 3H-benzimidazole- 4-carboxylic acid 3- trifluoromethoxy- benzylamide
86			C <sub>21</sub> H <sub>15</sub> ClN <sub>6</sub> O	402.84	403	[M+H] <sup>+</sup>	3.9	2-(1H-Indazol-3-yl)- 3H-benzimidazole- 4-carboxylic acid (6- chloro-pyridin-3- ylmethyl)-amide

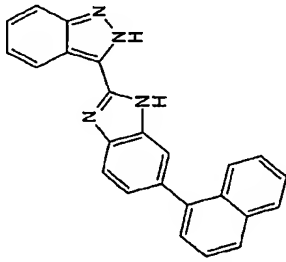
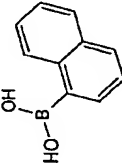
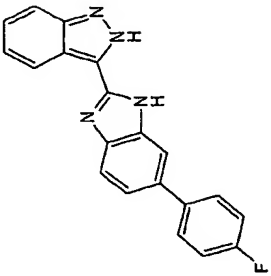
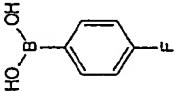
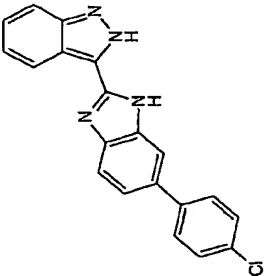
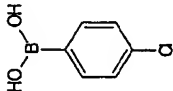
87			C <sub>24</sub> H <sub>19</sub> N <sub>5</sub> O <sub>2</sub>	409.45	410	[M+H] <sup>+</sup>	3.9	2-(1H-Indazol-3-yl)- 3H-benzimidazole- 4-carboxylic acid (2,3-dihydro- benzofuran-5- ylmethyl)-amide
88			C <sub>23</sub> H <sub>16</sub> F <sub>3</sub> N <sub>5</sub> O	435.41	436	[M+H] <sup>+</sup>	4.3	2-(1H-Indazol-3-yl)- 3H-benzimidazole- 4-carboxylic acid 3- trifluoromethyl- benzylamide
89			C <sub>23</sub> H <sub>19</sub> N <sub>5</sub> O <sub>2</sub> S	413.50	414	[M+H] <sup>+</sup>	3.98	2-(1H-Indazol-3-yl)- 3H-benzimidazole- 4-carboxylic acid 2- methylsulfanyl- benzylamide

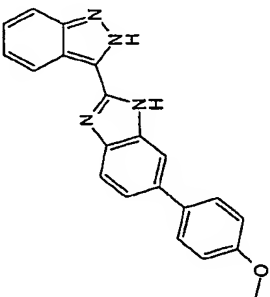
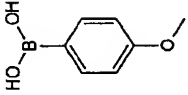
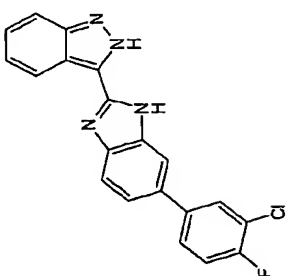
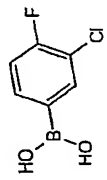
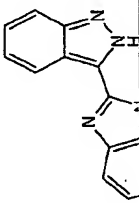
90			C20H15N5O2	357.37	358	[M+H] <sup>+</sup>	3.68	2-(1H-Indazol-3-yl)- 3H-benzimidazole- 4-carboxylic acid (furan-3-ylmethyl)- amide
91			C22H16N6O3	412.41	413	[M+H] <sup>+</sup>	3.95	2-(1H-Indazol-3-yl)- 3H-benzimidazole- 4-carboxylic acid 2- nitro-benzylamide
92			C24H21N5O	395.47	396	[M+H] <sup>+</sup>	4.45	2-(1H-Indazol-3-yl)- 3H-benzimidazole- 4-carboxylic acid 3,5- dimethyl- benzylamide

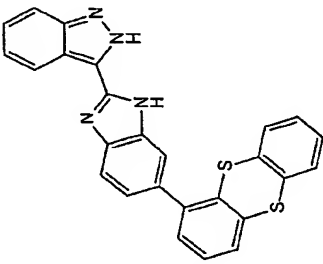
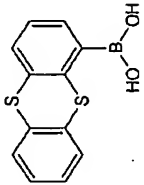
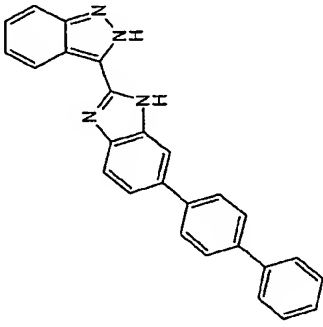
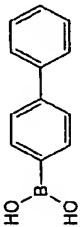


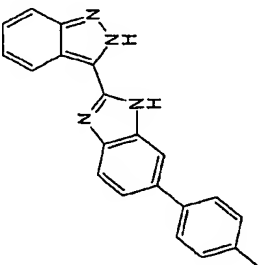
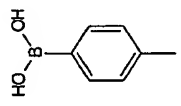
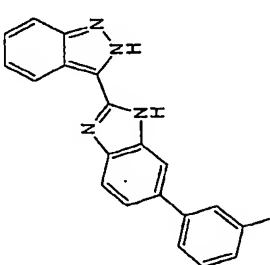
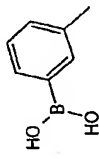
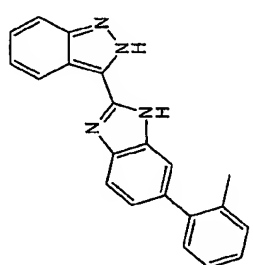
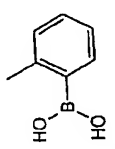
93			C22H16ClN5O	401.86	402	[M+H] <sup>+</sup>	5.03	2-(1H-Indazol-3-yl)- 3H-benzimidazole- 4-carboxylic acid 3- chloro-benzylamide
94			C21H15N5O	353.38	354	[M+H] <sup>+</sup>	4.27	2-(1H-Indazol-3-yl)- 3H-benzimidazole- 4-carboxylic acid phenylamide
95			C22H17N5O	367.41	368	[M+H] <sup>+</sup>	3.94	2-(1H-Indazol-3-yl)- 3H-benzimidazole- 4-carboxylic acid benzylamide

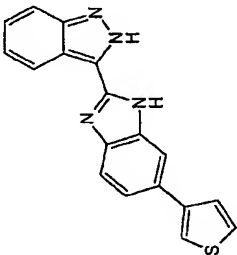
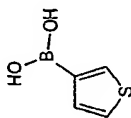
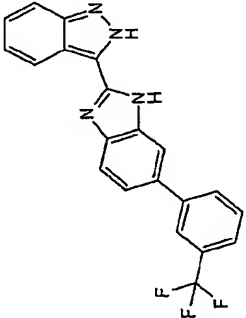
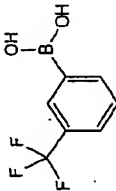
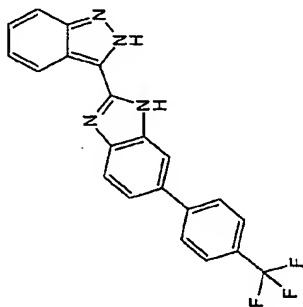
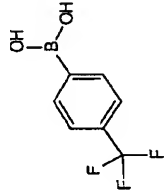
96			C23H19N5O	381.44	382	[M+H] <sup>+</sup>	4.01	2-(1H-Indazol-3-yl)- 3H-benzimidazole- 4-carboxylic acid phenethyl-amide
97			C20H14N4	310.36	311	[M+H] <sup>+</sup>	3.14	3-(6-Phenyl-1H- benzimidazol-2-yl)- 2H-indazole
98			C20H12Cl2N4	379.25	379	[M+H] <sup>+</sup>	3.63	3-[6-(2,4-Dichloro- phenyl)-1H- benzimidazol-2-yl]- 2H-indazole

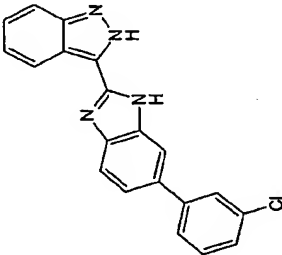
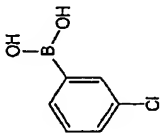
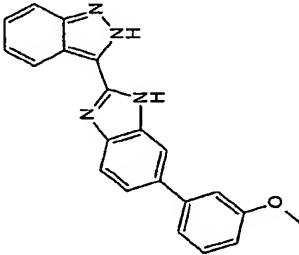
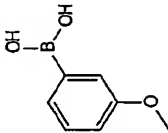
99			C <sub>24</sub> H <sub>16</sub> N <sub>4</sub>	360.42	361	[M+H] <sup>+</sup>	3.51	3-(6-Naphthalen-1-yl-1H-benzimidazol-2-yl)-2H-indazole
100			C <sub>20</sub> H <sub>13</sub> FN <sub>4</sub>	328.35	329	[M+H] <sup>+</sup>	3.21	3-[6-(4-Fluorophenyl)-1H-benzimidazol-2-yl]-2H-indazole
101			C <sub>20</sub> H <sub>13</sub> ClN <sub>4</sub>	344.805	345	[M+H] <sup>+</sup>	3.44	3-[6-(4-Chlorophenyl)-1H-benzimidazol-2-yl]-2H-indazole

102			C21H16N4O	340.386	341	[M+H] <sup>+</sup>	3.14	3-[6-(4-Methoxy-phenyl)-1H-benzimidazol-2-yl]-2H-indazole
103			C20H12ClFNa4	362.795	362	[M+H] <sup>+</sup>	3.51	3-[6-(3-Chloro-4-fluoro-phenyl)-1H-benzimidazol-2-yl]-2H-indazole
104			C20H12Cl2Na4	379.25	[378-380]	[M+H] <sup>+</sup>	3.81	3-[6-(3,5-Dichloro-phenyl)-1H-benzimidazol-2-yl]-2H-indazole

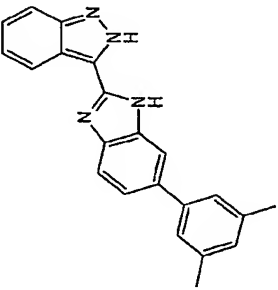
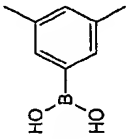
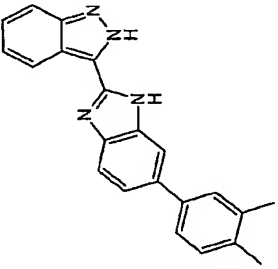
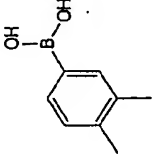
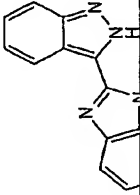
105			C <sub>26</sub> H <sub>16</sub> N <sub>4</sub> S <sub>2</sub>	448.57	449	[M+H] <sup>+</sup>	3.91	3-(6-Thianthren-1-yl)-1H-benzimidazol-2-yl)-2H-indazole
106			C <sub>26</sub> H <sub>18</sub> N <sub>4</sub>	386.458	387	[M+H] <sup>+</sup>	3.78	3-(6-Biphenyl-4-yl)-1H-benzimidazol-2-yl)-2H-indazole

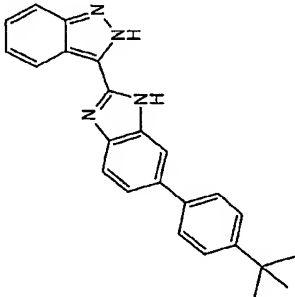
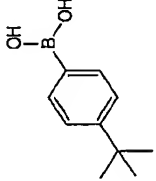
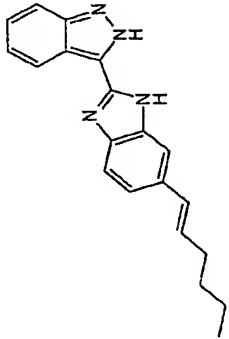
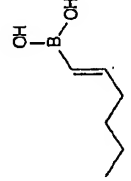
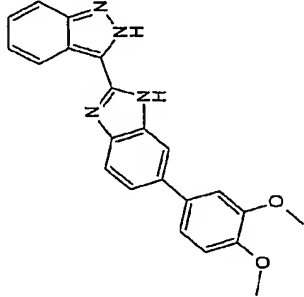
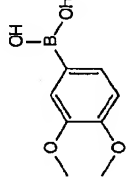
107				C21H16N4	324.387	324	[M]	3.38	3-(6-p-Tolyl-1H-benzotriazol-2-yl)-2H-indazole
108				C21H16N4	324.387	325	[M+H] <sup>+</sup>	3.41	3-(6-m-Tolyl-1H-benzotriazol-2-yl)-2H-indazole
109				C21H16N4	324.387	325	[M+H] <sup>+</sup>	3.41	3-(6-o-Tolyl-1H-benzotriazol-2-yl)-2H-indazole

110			C18H12N4S	316.386	317	[M+H] <sup>+</sup>	3.13	3-(6-Thiophen-3-yl-1H-benzimidazol-2-yl)-2H-indazole
111			C21H13F3N4	378.357	379	[M+H] <sup>+</sup>	3.65	3-[6-(3-Trifluoromethyl-phenyl)-1H-benzimidazol-2-yl]-2H-indazole
112			C21H13F3N4	378.357	379	[M+H] <sup>+</sup>	3.68	3-[6-(4-Trifluoromethyl-phenyl)-1H-benzimidazol-2-yl]-2H-indazole

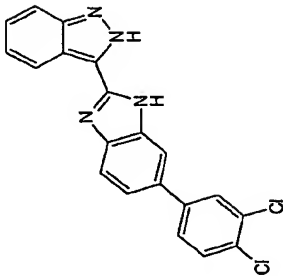
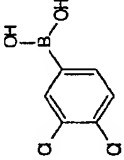
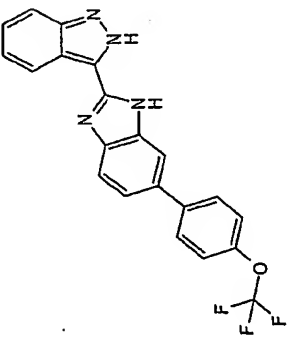
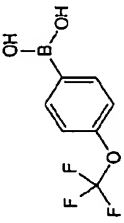
113			C <sub>20</sub> H <sub>13</sub> ClN <sub>4</sub>	344.805	345	[M+H] <sup>+</sup>	3.55	3-[6-(3-Chloro-phenyl)-1H-benzimidazol-2-yl]-2H-indazole
114			C <sub>21</sub> H <sub>16</sub> N <sub>4</sub> O	340.386	341	[M+H] <sup>+</sup>	3.41	3-[6-(3-Methoxy-phenyl)-1H-benzimidazol-2-yl]-2H-indazole

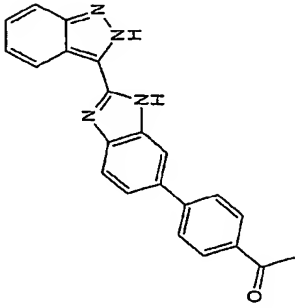
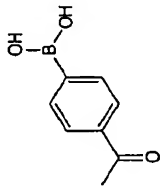
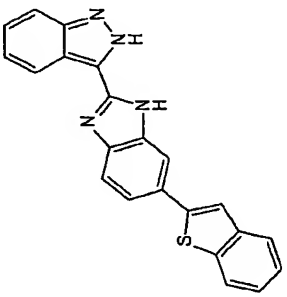
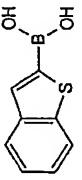


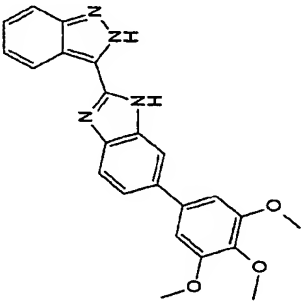
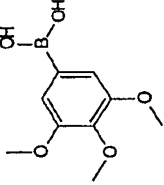
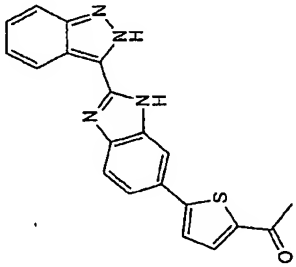
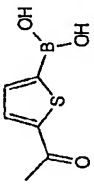
115			C22H18N4	338.414	339	[M+H] <sup>+</sup>	3.39	3-[6-(3,5-Dimethyl-phenyl)-1H-benzimidazol-2-yl]-2H-indazole
116			C22H18N4	338.414	339	[M+H] <sup>+</sup>	3.55	3-[6-(3,4-Dimethyl-phenyl)-1H-benzimidazol-2-yl]-2H-indazole
117			C21H14N4O2	354.369	354	[M]	3.18	3-(6-Benzo[1,3]dioxol-5-yl-1H-benzimidazol-2-yl)-2H-indazole

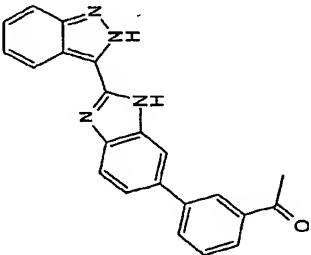
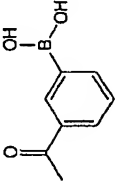
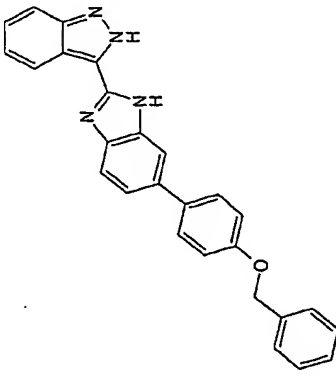
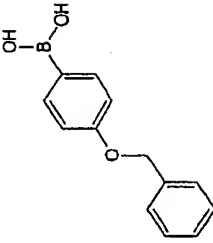
118			C <sub>24</sub> H <sub>22</sub> N <sub>4</sub>	366.468	367	[M+H] <sup>+</sup>	3.95	3-[6-(4-tert-Butyl-phenyl)-1H-benzimidazol-2-yl]-2H-indazole
119			C <sub>20</sub> H <sub>20</sub> N <sub>4</sub>	316.408	317	[M+H] <sup>+</sup>	3.72	3-(6-Hex-1-enyl)-1H-benzimidazol-2-yl)-2H-indazole
120			C <sub>22</sub> H <sub>18</sub> N <sub>4</sub> O <sub>2</sub>	370.412	371	[M+H] <sup>+</sup>	3.00	3-[6-(3,4-Dimethoxy-phenyl)-1H-benzimidazol-2-yl]-2H-indazole

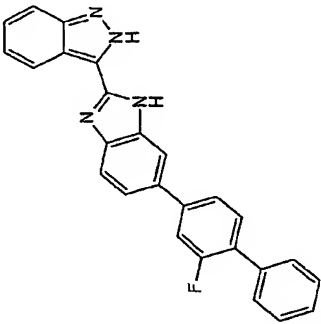
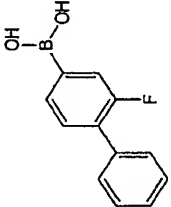
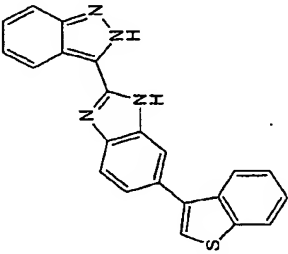
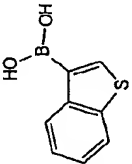
121				C20H14N4O	326.359	327	[M+H] <sup>+</sup>	2.92	3-[2-(2H-Indazol-3-yl)-3H-phenol-5-yl]-phenol
122				C20H14N4O	326.359	327	[M+H] <sup>+</sup>	2.84	4-[2-(2H-Indazol-3-yl)-3H-phenol-5-yl]-phenol

123				C <sub>20</sub> H <sub>12</sub> Cl <sub>2</sub> N <sub>4</sub>	379.25	378	[M+H] <sup>+</sup>	3.82	3-[6-(3,4-Dichloro-phenyl)-1H-benzimidazol-2-yl]-2H-indazole
124				C <sub>21</sub> H <sub>13</sub> F <sub>3</sub> N <sub>4</sub> O	394.356	395	[M+H] <sup>+</sup>	3.72	3-[6-(4-Trifluoromethoxy-phenyl)-1H-benzimidazol-2-yl]-2H-indazole

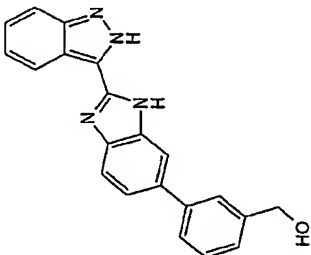
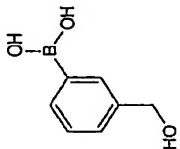
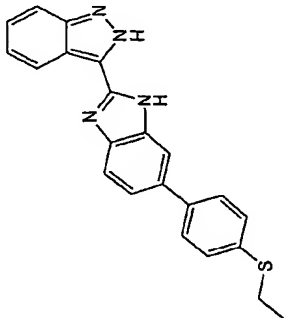
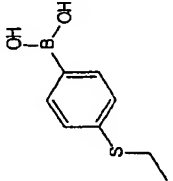
125			C <sub>22</sub> H <sub>16</sub> N <sub>4</sub> O	352.397	353	[M+H] <sup>+</sup>	3.08	1-{4-[2-(2H-Indazol-3-yl)-3H-benzimidazol-5-yl]-phenyl}-ethanone
126			C <sub>22</sub> H <sub>14</sub> N <sub>4</sub> S	366.446	367	[M+H] <sup>+</sup>	3.82	3-(6-Benzo[b]thiophen-2-yl)-1H-benzimidazol-2-yl)-2H-indazole

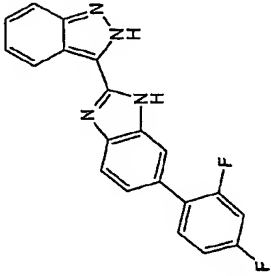
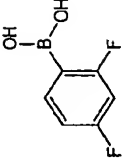
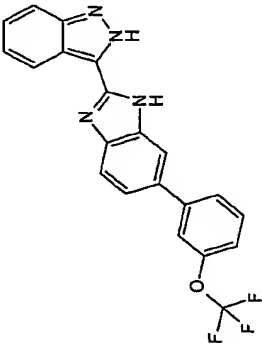
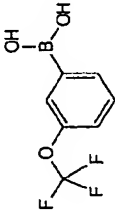
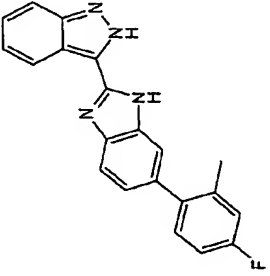
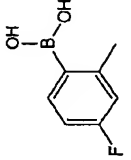
127			C23H20N4O3	400.438	401	[M+H] <sup>+</sup>	3.02	3-{[6-(3,4,5-Trimethoxy-phenyl)-1H-benzimidazol-2-yl]-2H-indazole
128			C20H14N4OS	358.423	359	[M+H] <sup>+</sup>	3.09	1-{5-[2-(2H-Indazol-3-yl)-3H-benzimidazol-5-yl]-thiophen-2-yl}-ethanone

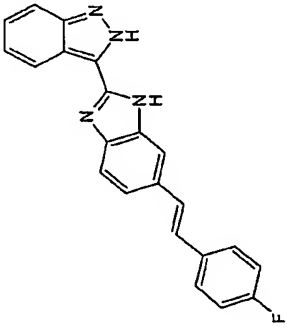
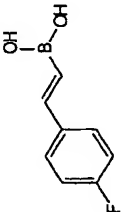
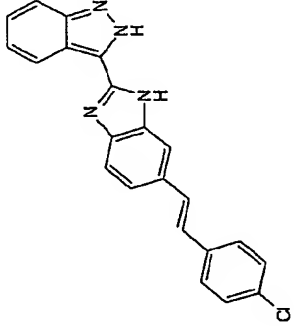
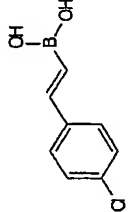
129					C <sub>22</sub> H <sub>16</sub> N <sub>4</sub> O	352.397	353	[M+H] <sup>+</sup>	3.05	1-{3-[2-(2H-Indazol-3-yl)-3H-benzimidazol-5-yl]-phenyl}-ethanone
130					C <sub>27</sub> H <sub>20</sub> N <sub>4</sub> O	416.484	417	[M+H] <sup>+</sup>	3.75	3-[6-(4-Benzyloxyphenyl)-1H-benzimidazol-2-yl]-2H-indazole

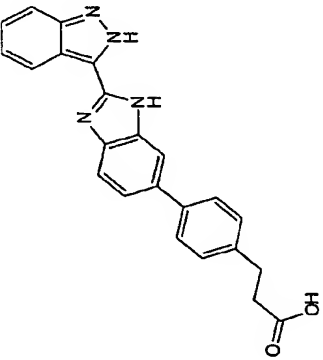
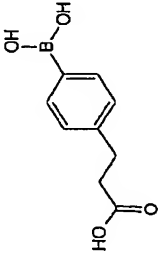
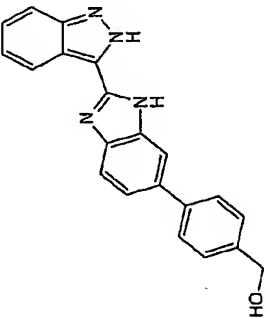
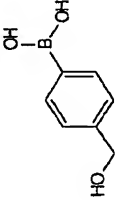
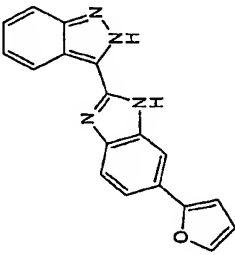
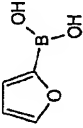
131			C26H17FN4	404.448	405	[M+H] <sup>+</sup>	4.02	3-[6-(2-Fluoro-biphenyl-4-yl)-1H-benzimidazol-2-yl]-2H-indazole
132			C22H14N4S	366.446	367	[M+H] <sup>+</sup>	3.55	3-[6-(2-benzothiophen-3-yl)-1H-benzimidazol-2-yl]-2H-indazole

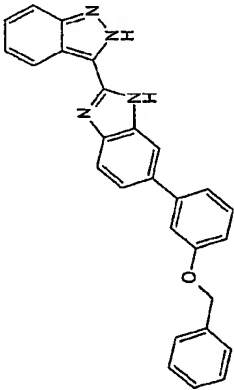
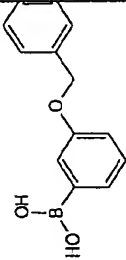
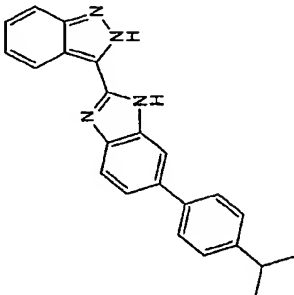
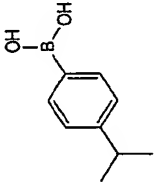
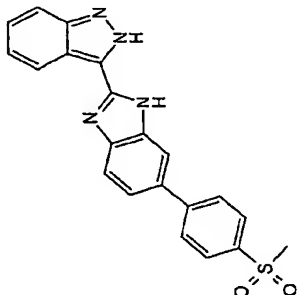
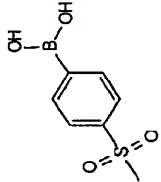


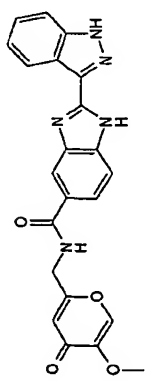
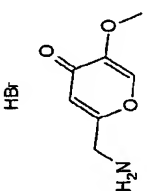
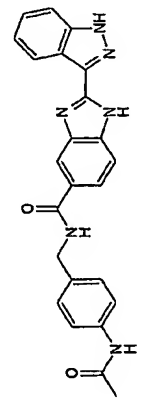
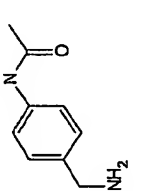
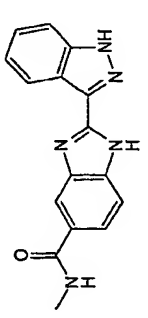

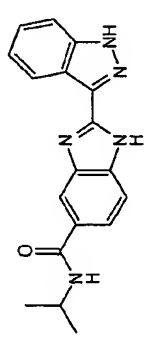
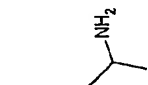
133				C <sub>21</sub> H <sub>16</sub> N <sub>4</sub> O	340.386	341	[M+H] <sup>+</sup>	2.79	{3-[2-(2H-Indazol-3-yl)-3H-benzimidazol-5-yl]-phenyl}-methanol
134				C <sub>22</sub> H <sub>18</sub> N <sub>4</sub> S	370.478	371	[M+H] <sup>+</sup>	3.62	3-[6-(4-Ethylsulfanylphenyl)-1H-benzimidazol-2-yl]-2H-indazole

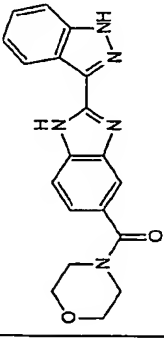

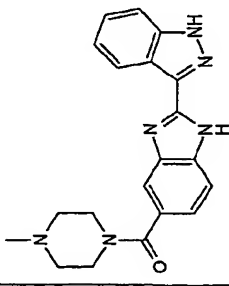
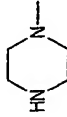
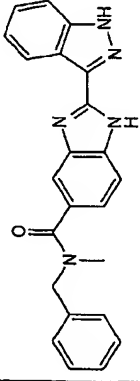
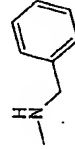
135			C20H12F2N4	346.34	347	[M+H] <sup>+</sup>	3.29	3-[6-(2,4-Difluoro-phenyl)-1H-benzimidazol-2-yl]-2H-indazole
136			C21H13F3N4O	394.356	395	[M+H] <sup>+</sup>	3.66	3-[6-(3-Trifluoromethoxy-phenyl)-1H-benzimidazol-2-yl]-2H-indazole
137			C21H15FN4	342.377	343	[M+H] <sup>+</sup>	3.36	3-[6-(4-Fluoro-2-methyl-phenyl)-1H-benzimidazol-2-yl]-2H-indazole

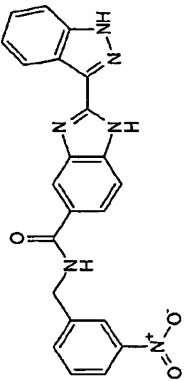
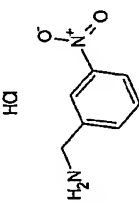
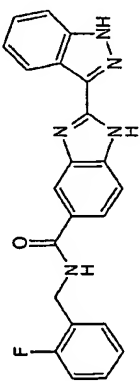
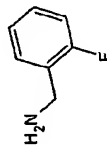
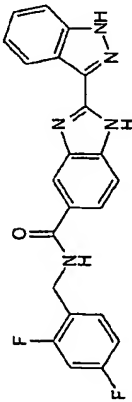
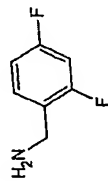
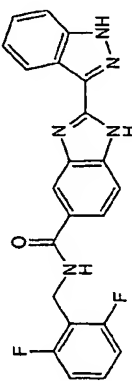
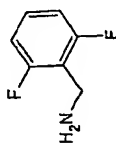
138			C <sub>22</sub> H <sub>15</sub> FN <sub>4</sub>	354.388	355	[M+H] <sup>+</sup>	3.49	3-{6-[2-(4-Fluorophenyl)-vinyl]-1H-benzimidazol-2-yl}-2H-indazole
139			C <sub>22</sub> H <sub>15</sub> ClN <sub>4</sub>	370.843	371	[M+H] <sup>+</sup>	3.76	3-{6-[2-(4-Chlorophenyl)-vinyl]-1H-benzimidazol-2-yl}-2H-indazole

140			C23H18N4O2	382.423	383	[M+H] <sup>+</sup>	3.03	3-{4-[2-(2H-Indazol-3-yl)-3H-benzimidazol-5-yl]-phenyl}-propionic acid
141			C21H16N4O	340.386	341	[M+H] <sup>+</sup>	2.72	{4-[2-(2H-Indazol-3-yl)-3H-benzimidazol-5-yl]-phenyl}-methanol
142			C18H12N4O	300.321	301	[M+H] <sup>+</sup>	3.02	3-(6-Furan-2-yl-1H-benzimidazol-2-yl)-2H-indazole

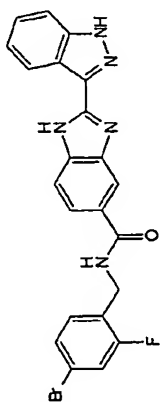
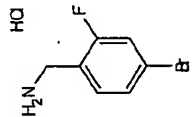
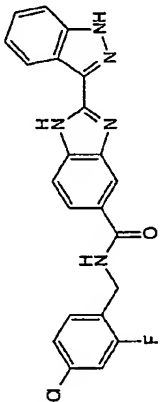
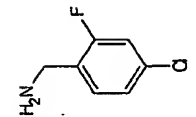
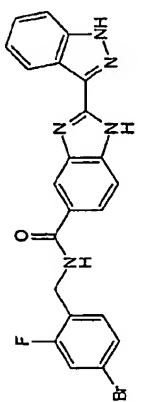
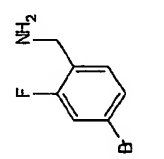
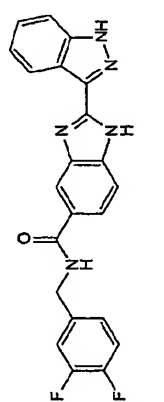
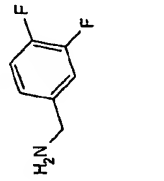
143			C <sub>27</sub> H <sub>20</sub> N <sub>4</sub> O	416.484	417	[M+H] <sup>+</sup>	3.93	3-[6-(3-Benzoyloxy-phenyl)-1H-benzimidazol-2-yl]-2H-indazole
144			C <sub>23</sub> H <sub>20</sub> N <sub>4</sub>	352.441	353	[M+H] <sup>+</sup>	3.88	3-[6-(4-Isopropyl-phenyl)-1H-benzimidazol-2-yl]-2H-indazole
145			C <sub>21</sub> H <sub>16</sub> N <sub>4</sub> O <sub>2</sub> S	388.449	389	[M+H] <sup>+</sup>	3.03	3-[6-(4-Methanesulfonyl-phenyl)-1H-benzimidazol-2-yl]-2H-indazole

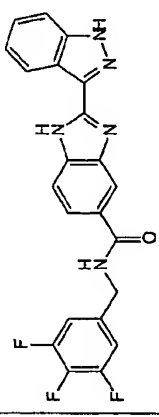
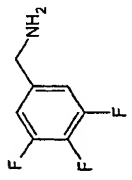
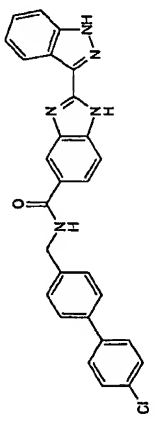
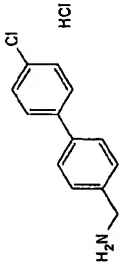
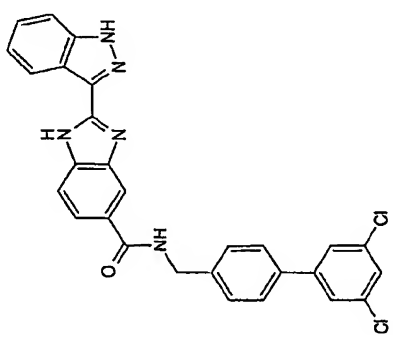
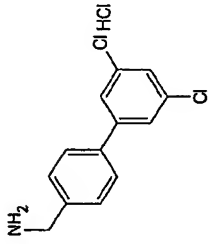
146			C22H17N5O4	415.409	415	[M]	2.31	2-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid (tetrahydro-pyran-4-ylmethyl)-amide
147			C24H20N6O2	424.464	424	[M]	2.58	2-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid 4-acetylamino-benzylamide
148			C16H13N5O	291.314	291	[M]	2.22	2-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid methylamide
149			C18H17N5O	319.368	319	[M]	2.63	2-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid isopropylamide

150			C <sub>19</sub> H <sub>17</sub> N <sub>5</sub> O <sub>2</sub>	347.378	347	[M]	2.23	[2-(1H-Indazol-3-yl)-1H-benzimidazol-5-yl]-morpholin-4-yl-methanone
151			C <sub>20</sub> H <sub>20</sub> N <sub>6</sub> O	360.421	361	[M+H] <sup>+</sup>	1.94	[2-(1H-Indazol-3-yl)-1H-benzimidazol-5-yl]-(4-methyl-piperazin-1-yl)-methanone
152			C <sub>23</sub> H <sub>19</sub> N <sub>5</sub> O	381.439	381	[M]	3.45	2-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid benzyl-methyl-amide

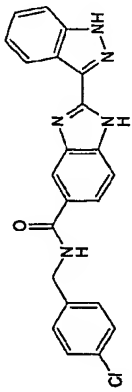
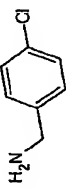
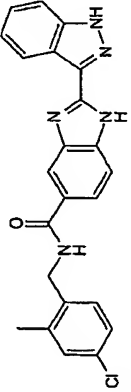
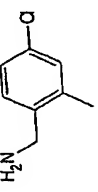
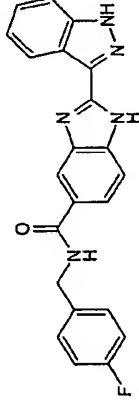
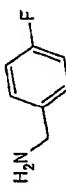
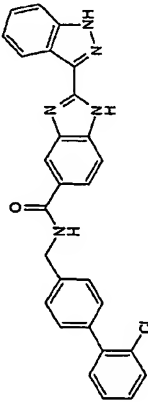
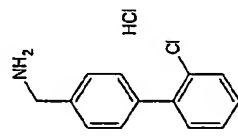
153			C22H16N6O3	412.409	412	[M]	3.32	2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid 3- nitro-benzylamide
154			C22H16FN5O	385.402	385	[M]	2.96	2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid 2- fluoro-benzylamide
155			C22H15F2N5O	403.392	403	[M]	3.26	2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid 2,4- difluoro-benzylamide
156			C22H15F2N5O	403.392	403	[M]	2.93	2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid 2,6- difluoro-benzylamide

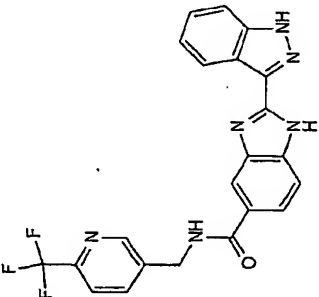
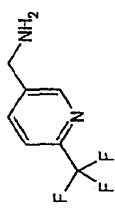
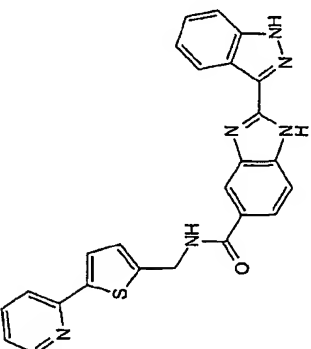
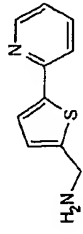
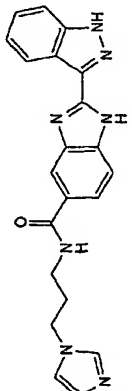



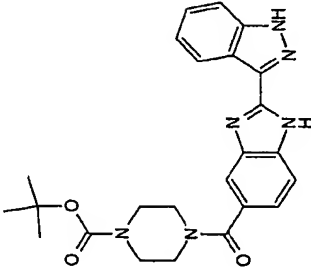
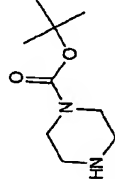
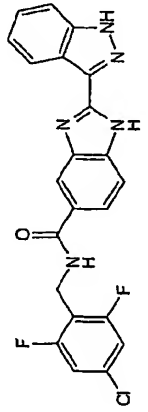
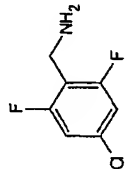
157			C22H15BrFN5O	464.303	464	[M]	3.34	2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid 4- bromo-2-fluoro- benzylamide
158			C22H15ClFN5O	419.847	419	[M]	3.21	2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid 4- chloro-2-fluoro- benzylamide
159			C22H15BrFN5O	464.303	464	[M]	3.31	2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid 4- bromo-2-fluoro- benzylamide
160			C22H15F2N5O	403.392	403	[M]	3.64	2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid 3,4- difluoro-benzylamide

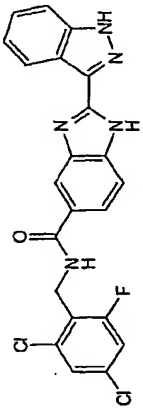
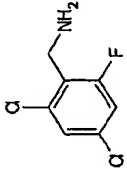
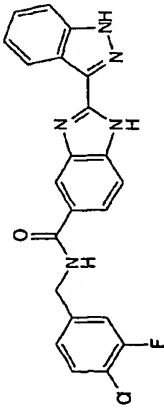
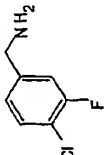
161			C22H14F3N5O	421.382	421	[M]	3.35	2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid 3,4,5-trifluoro- benzylamide
162			C28H20ClN5O	477.955	477	[M]	3.89	2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid (4'- chloro-biphenyl-4- ylmethyl)-amide
163			C28H19Cl2N5O	512.4	512	[M]	4.36	2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid (3',5'-dichloro- biphenyl-4-ylmethyl)- amide

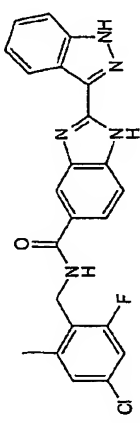
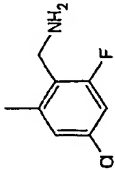
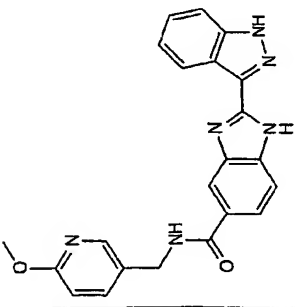
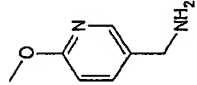
164			C28H20FN5O	461.5	461	[M]	3.6	2-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid (4'-fluoro-biphenyl-4-ylmethyl)-amide
165			C22H16FN5O	385.402	385	[M]	2.94	2-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid 2-fluoro-benzylamide
166			C23H17F2N5O	417.419	417	[M]	3.14	2-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid 2,6-difluoro-3-methylbenzylamide
167			C22H15Cl2N5O	436.302	436	[M]	3.48	2-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid 2,4-dichloro-benzylamide

168			C22H16ClN5O	401.857	401	[M]	3.73	2-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid 4-chloro-benzylamide
169			C23H18ClN5O	415.884	415	[M]	3.52	2-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid 4-chloro-2-methylbenzylamide
170			C22H16FN5O	385.402	385	[M]	3.09	2-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid 4-fluoro-benzylamide
171			C28H20ClN5O	477.955	477	[M]	3.9	2-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid (2'-chloro-biphenyl-4-ylmethyl)-amide

172			C22H15F3N6O	436.397	436	[M]	2.93	2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid (6- trifluoromethyl- pyridin-3-ylmethyl)- amide
173			C25H18N6OS	450.524	450	[M]	2.67	2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid (5- pyridin-2-yl-thiophen- 2-ylmethyl)-amide
174			C21H19N7O	385.431	385	[M]	2.11	2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid (3- imidazol-1-yl-propyl)- amide

175			C <sub>24</sub> H <sub>26</sub> N <sub>6</sub> O <sub>3</sub>	446.511	447	[M+H] <sup>+</sup>	3.11	4-[2-(1H-Indazol-3-yl)-1H-benzimidazole-5-carbonyl]-piperazine-1-carboxylic acid tert-butyl ester
176					438	[M+H] <sup>+</sup>		2-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid (2,6-difluoro-4-chloro-benzyl)amide

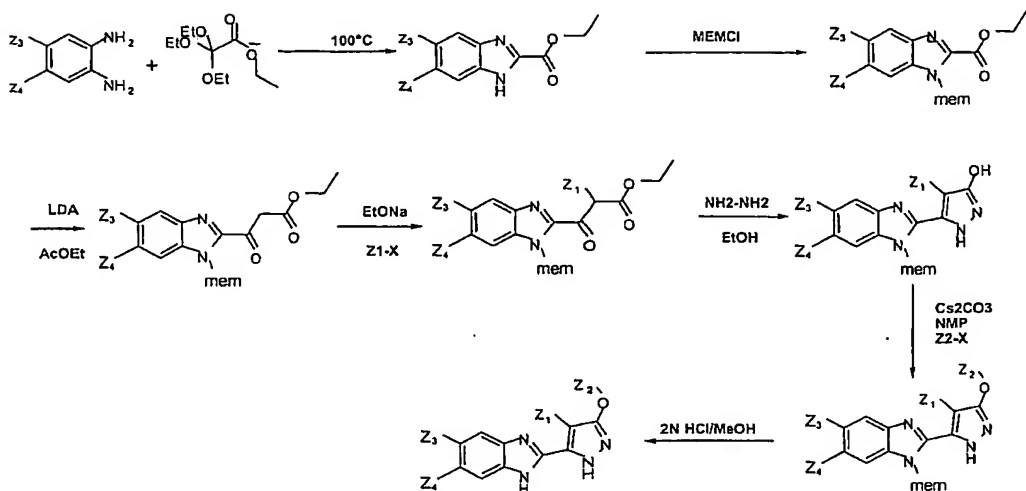
177				437	[M+H] <sup>+</sup>		2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid (2,4-dichloro-6- fluoro-benzyl)amide
178				420	[M+H] <sup>+</sup>		2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid (3- fluoro-4-chloro- benzyl)amide

179				434	[M+H] <sup>+</sup>		2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid (2- fluoro-4-chloro-6- methyl-benzy)amide
180				399	[M+H] <sup>+</sup>		2-(1H-Indazol-3-yl)- 1H-benzimidazole- 5-carboxylic acid (6- methoxy-pyridin-3- ylmethyl)-amide



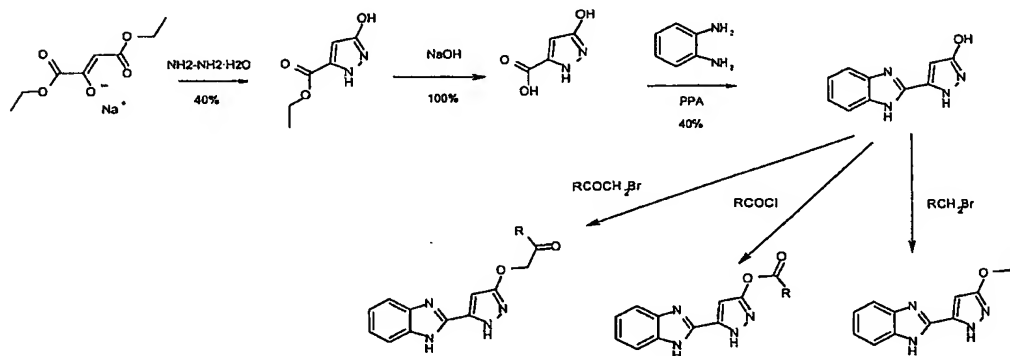
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The products of formula (I) of the present application can also be prepared according to the following process:



- 5 In the above scheme, the values of Z3 and Z4 are chosen from the values of R2 and R3 as defined above and the values of Z1 and -OZ2 are chosen from the values of X1, X2 or X3 with R1 representing a pyrazole radical,

- 10 When Z1, Z3 and Z4 represent a hydrogen atom, it is possible in particular to prepare products of formula (I) of the present application according to the following synthesis scheme:



- 15 Products of formula (I) of the present application which constitute Examples 181 to 228 of the present application are represented in the table 4 hereinbelow: these products can be prepared according to the schemes indicated above and in particular the product of Example 181 can be prepared according to the

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procedure indicated below. The products of Examples 182 to 228 can be prepared like the product of Example 181.

#### EXAMPLE 181

##### 5 2-[5-(benzyloxy)-2H-pyrazol-3-yl]-1H-benzoimidazole

Step 1: the cyclization is performed as in: Chem. Pharm. Bull., 31(4), 1228-1234 (1983); J. Org. Chem., 47(2), 214-221 (1982).

- 10 Step 2: To the crude ester 1.015 g in 50 ml of MeOH, was added 5.5 ml of 6N NaOH and the mixture is heated to reflux during 2 h. After evaporation of most of the methanol, the medium is cooled and conc. HCl is carefully added until pH = 2. After further evaporation to dryness, the solid is triturated three times with 30 ml of MeOH/AcOEt 1/1 and the filtrate evaporated to give 0.875 g of light brown solid after desiccation.
- 15 LC-MS: [gradient acetonitrile/water 0.1% HCOOH; Xterra RP18 2.1 x 50 mm] retention time 0.53 minutes, MH<sup>+</sup> = 129, 95% pure

- Step 3: To 3.5 g of PPA (polyphosphoric acid) were added 0.701 g of 1,2-phenylenediamine and 0.87 g of the step 2 acid. The mixture is heated to 150°C during 1.5 h. After cooling, conc NH<sub>4</sub>OH was added
- 20 until pH = 3. The green precipitate is filtered, washed with water and then with acetone. After one night drying under vacuum at 50°C, 2.1 g of solid remains containing around 50% of mineral salts. MS: EI M<sup>+</sup> = 200.

- Step 4: Ex. 181: To 80 mg of the step 3 solid in 4 ml of NMP were added caesium carbonate 137 mg
- 25 and benzyl bromide 72 mg. After 2 h the mixture is hydrolysed with saturated KH<sub>2</sub>PO<sub>4</sub> and extracted with AcOEt. After evaporation, the crude mixture was submitted to preparative LC-MS to give 8 mg of pure compound:
- LC-MS: [gradient acetonitrile/water 0.1% HCOOH; Xterra RP18 2.1 x 50 mm] retention time 3.17 minutes, MH<sup>+</sup> = 291. 97% pure

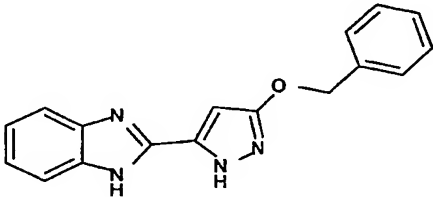
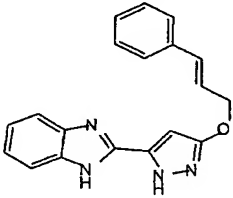
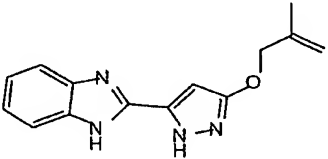
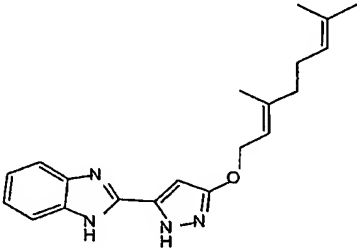
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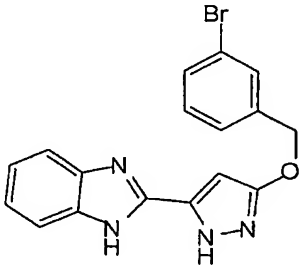
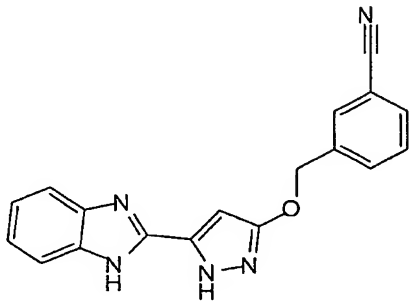
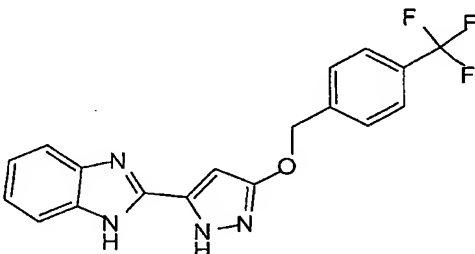
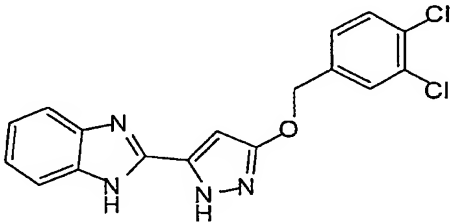
In the same way, the step 4 is carried out with 15 benzyl or allyl bromides, 15  $\alpha$ -bromocarbonyl compounds and 15 acid chlorides in either DMF or NMP to give the expected compounds of TABLE 4. Examples 181 to 228 of the present application are represented in TABLE 4.

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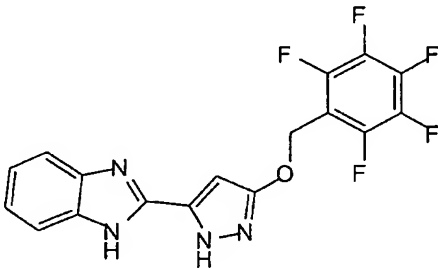
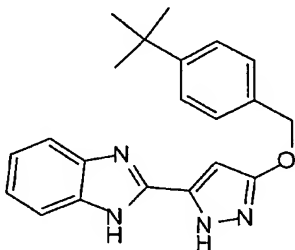
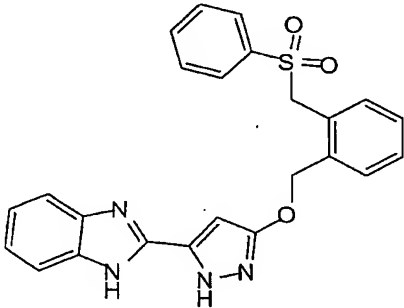
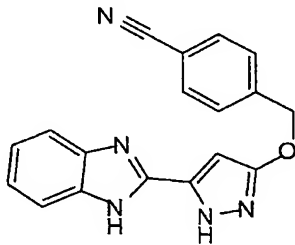
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TABLE 4

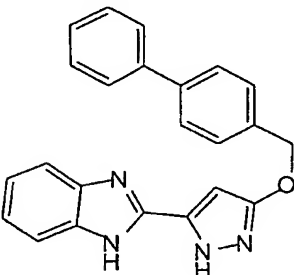
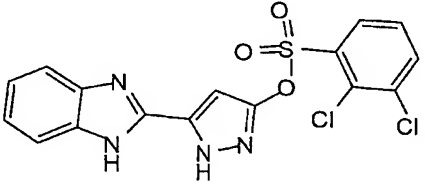
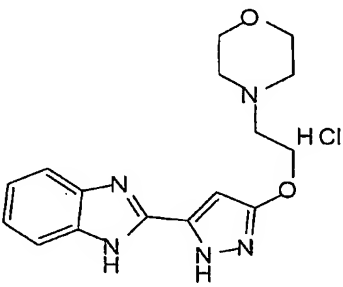
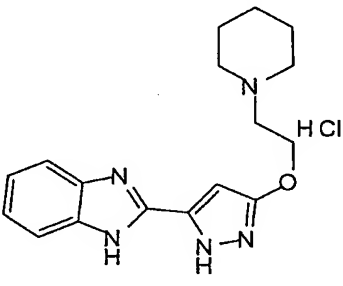
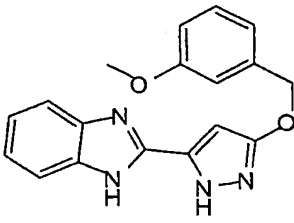
CHEMISTRY		
	181	2-[5-(benzyloxy)-2H-pyrazol-3-yl]-1H-benzimidazole
	182	2-[5-(3-Phenyl-allyloxy)-2H-pyrazol-3-yl]-1H-benzimidazole
	183	2-[5-(2-Methyl-allyloxy)-2H-pyrazol-3-yl]-1H-benzimidazole
	184	2-[5-(3,7-Dimethyl-octa-2,6-dienyloxy)-2H-pyrazol-3-yl]-1H-benzimidazole

	<b>185</b>	2-[5-(3-Bromobenzyloxy)-2H-pyrazol-3-yl]-1H-benzimidazole
	<b>186</b>	3-[5-(1H-Benzimidazol-2-yl)-1H-pyrazol-3-yloxymethyl]-benzonitrile
	<b>187</b>	2-[5-(4-Trifluoromethylbenzyloxy)-2H-pyrazol-3-yl]-1H-benzimidazole
	<b>188</b>	2-[5-(3,4-Dichlorobenzyloxy)-2H-pyrazol-3-yl]-1H-benzimidazole

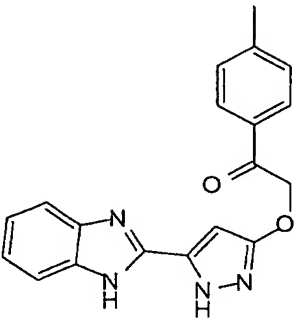
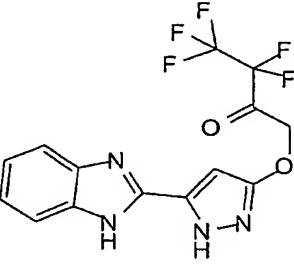
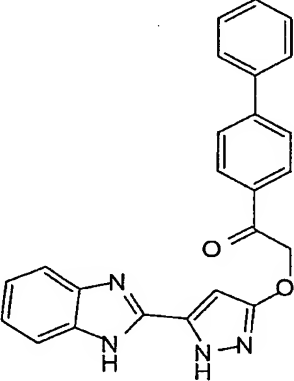
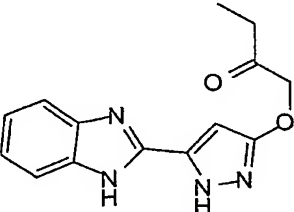
-365-

	189	2-(5-Pentafluorophenylmethoxy-2H-pyrazol-3-yl)-1H-benzoimidazole
	190	2-[5-(4-tert-Butylbenzyloxy)-2H-pyrazol-3-yl]-1H-benzoimidazole
	191	2-[5-(2-Benzenesulfonylmethylbenzyloxy)-2H-pyrazol-3-yl]-1H-benzoimidazole
	192	4-[5-(1H-Benzoimidazol-2-yl)-1H-pyrazol-3-yloxymethyl]-benzonitrile

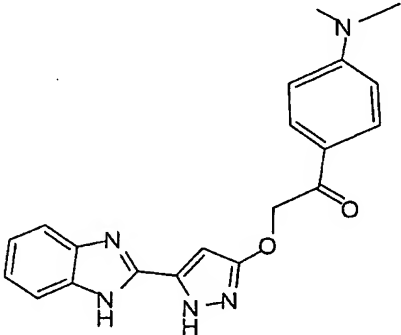
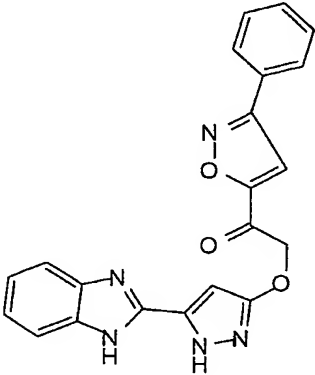
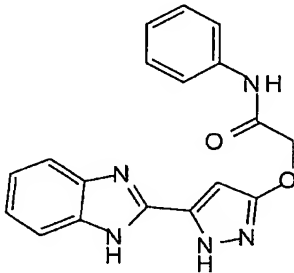
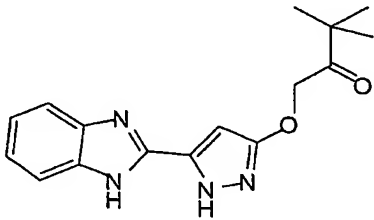
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	193	2-[5-(Biphenyl-4-ylmethoxy)-2H-pyrazol-3-yl]-1H-benzimidazole
	194	2,3-Dichlorobenzenesulfonic acid 5-(1H-benzimidazol-2-yl)-1H-pyrazol-3-yl ester
	195	2-[5-(2-Morpholin-4-ylethoxy)-2H-pyrazol-3-yl]-1H-benzimidazole
	196	2-[5-(2-Piperidin-1-ylethoxy)-2H-pyrazol-3-yl]-1H-benzimidazole
	197	2-[5-(3-Methoxybenzyloxy)-2H-pyrazol-3-yl]-1H-benzimidazole

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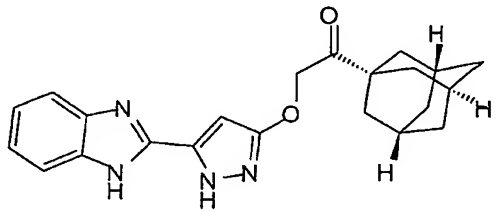
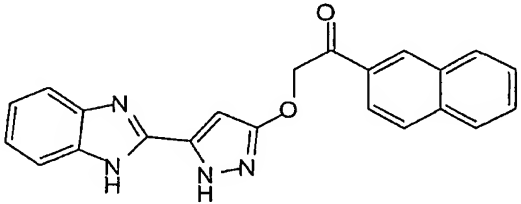
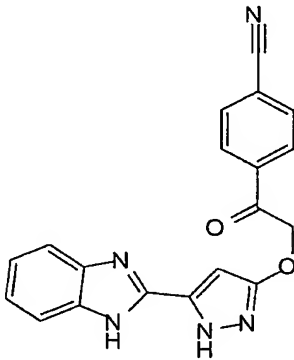
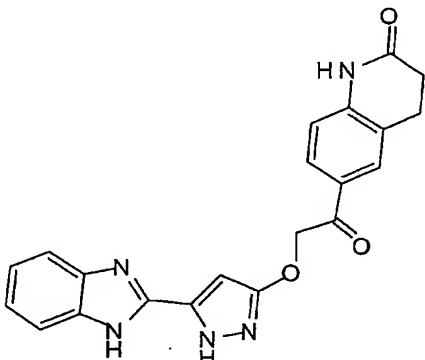
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	199	1-[5-(1H-Benzoimidazol-2-yl)-1H-pyrazol-3-yloxy] 3,3,4,4,4-pentafluorobutan-2-one
	200	2-[5-(1H-Benzoimidazol-2-yl)-1H-pyrazol-3-yloxy] 1-biphenyl-4-yl-ethanone
	201	1-[5-(1H-Benzoimidazol-2-yl)-1H-pyrazol-3-yloxy] butan-2-one

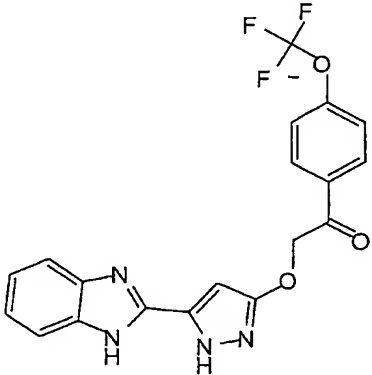
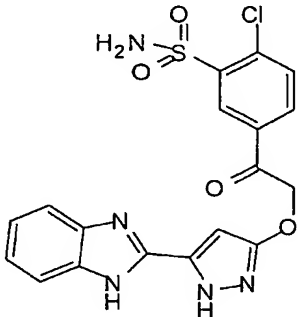
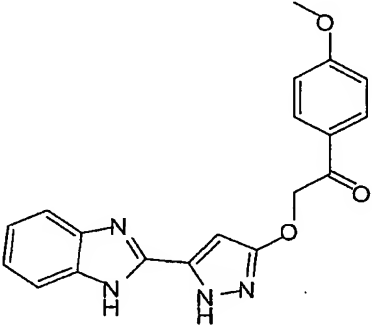
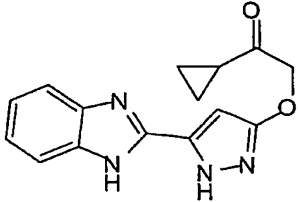
-368-

	202	2-[5-(1H-Benzoimidazol-2-yl)-1H-pyrazol-3-yloxy] 1-(4-dimethylamino-phenyl)-ethanone
	203	2-[5-(1H-Benzoimidazol-2-yl)-1H-pyrazol-3-yloxy] 1-(3-phenyl-isoxazol-5-yl)-ethanone
	204	2-[5-(1H-Benzoimidazol-2-yl)-1H-pyrazol-3-yloxy] N-phenyl-acetamide
	205	1-[5-(1H-Benzoimidazol-2-yl)-1H-pyrazol-3-yloxy] 3,3-dimethyl-butan-2-one

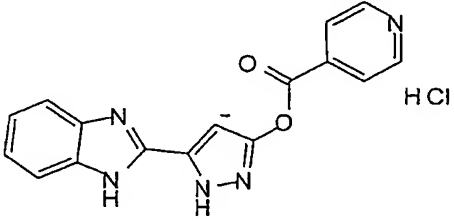
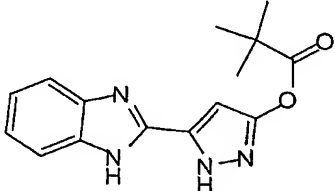
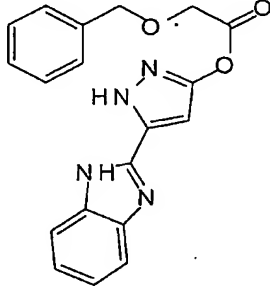
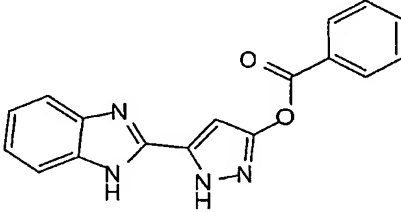
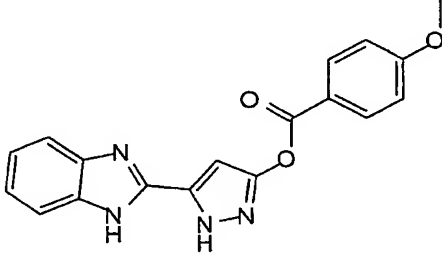


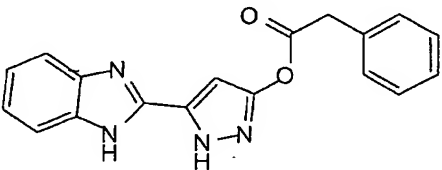
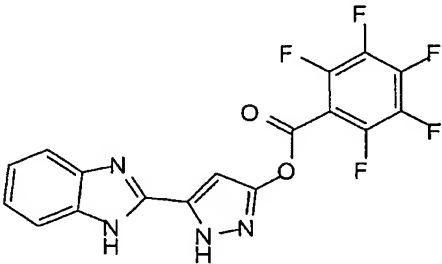
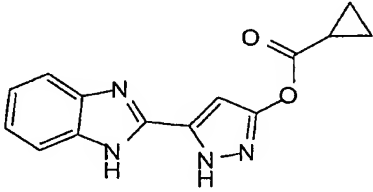
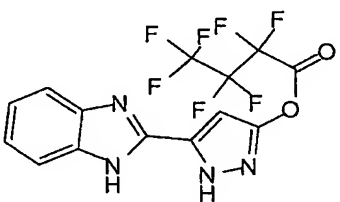
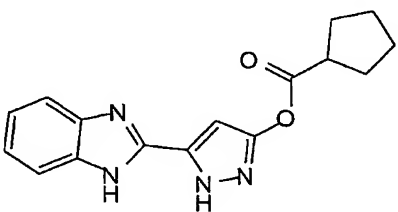
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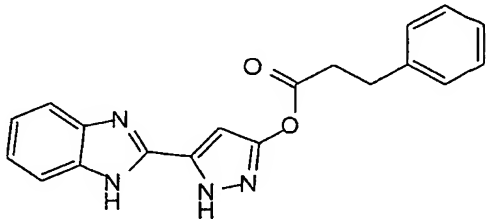
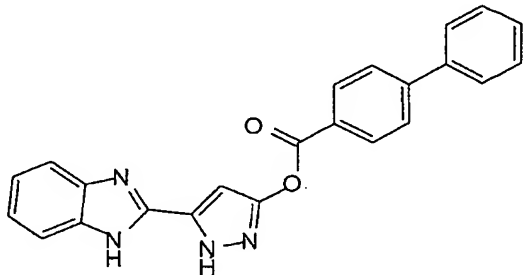
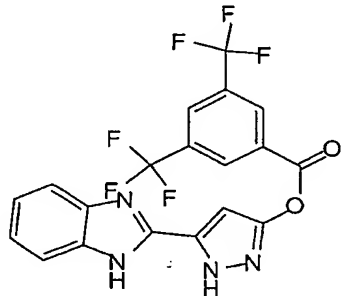
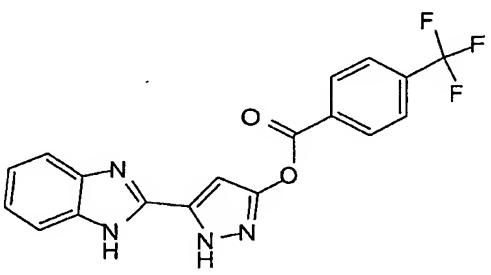
	206	1-Adamantan-1-yl-2-[5-(1H-benzoimidazol-2-yl)-1H-pyrazol-3-yloxy]-ethanone
	207	2-[5-(1H-Benzoimidazol-2-yl)-1H-pyrazol-3-yloxy]-1-naphthalen-2-yl-ethanone
	208	4-{2-[5-(1H-Benzoimidazol-2-yl)-1H-pyrazol-3-yloxy]-acetyl}-benzonitrile
	209	6-{2-[5-(1H-Benzoimidazol-2-yl)-1H-pyrazol-3-yloxy]-acetyl}-3,4-dihydro-1H-quinolin-2-one

	<b>210</b>	2-[5-(1H-Benzoimidazol-2-yl)-1H-pyrazol-3-yloxy] 1-(4-trifluoromethoxy-phenyl)-ethanone
	<b>211</b>	5-{2-[5-(1H-Benzoimidazol-2-yl)-1H-pyrazol-3-yloxy]-acetyl}- 2-chloro- benzenesulfonamide
	<b>212</b>	2-[5-(1H-Benzoimidazol-2-yl)-1H-pyrazol-3-yloxy] 1-(4-methoxy-phenyl)- ethanone
	<b>213</b>	2-[5-(1H-Benzoimidazol-2-yl)-1H-pyrazol-3-yloxy] 1-cyclopropyl-ethanone

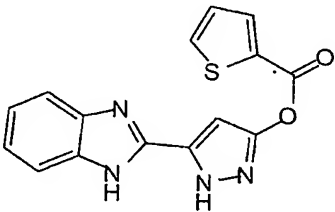
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	214	Isonicotinic acid 5-(1H-benzoimidazol-2-yl)-1H-pyrazol-3-yl ester
	215	2,2-Dimethyl-propionic acid 5-(1H-benzoimidazol-2-yl)-1H-pyrazol-3-yl ester
	216	Benzyloxy-acetic acid 5-(1H-benzoimidazol-2-yl)-1H-pyrazol-3-yl ester
	217	Benzoic acid 5-(1H-benzoimidazol-2-yl)-1H-pyrazol-3-yl ester
	218	4-Methoxy-benzoic acid 5-(1H-benzoimidazol-2-yl)-1H-pyrazol-3-yl ester

	219	Phenyl-acetic acid 5-(1H-benzoimidazol-2-yl)-1H-pyrazol-3-yl ester
	220	2,3,4,5,6-Pentafluorobenzoic acid 5-(1H-benzoimidazol-2-yl)-1H-pyrazol-3-yl ester
	221	Cyclopropanecarboxylic acid 5-(1H-benzoimidazol-2-yl)-1H-pyrazol-3-yl ester
	222	2,2,3,3,4,4,4-Heptafluorobutyric acid 5-(1H-benzoimidazol-2-yl)-1H-pyrazol-3-yl ester
	223	Cyclopentanecarboxylic acid 5-(1H-benzoimidazol-2-yl)-1H-pyrazol-3-yl ester

	224	3-Phenyl-propionic acid 5-(1H-benzoimidazol-2-yl)-1H-pyrazol-3-yl ester
	225	Biphenyl-4-carboxylic acid 5-(1H- benzoimidazol-2-yl)-1H- pyrazol-3-yl ester
	226	3,5-Bis-trifluoromethyl- benzoic acid 5-(1H- benzoimidazol-2-yl)-1H- pyrazol-3-yl ester
	227	4-Trifluoromethyl- benzoic acid 5-(1H- benzoimidazol-2-yl)-1H- pyrazol-3-yl ester

-374-

	228	Thiophene-2-carboxylic acid 5-(1H-benzoimidazol-2-yl)-1H-pyrazol-3-yl ester
---	-----	---

5 Example 229: pharmaceutical composition

Tablets corresponding to the formula below were prepared:

Product of Example 1 ..... 0.2 g

Excipient for a finished tablet containing..... 1 g

(details of the excipient: lactose, talc, starch,

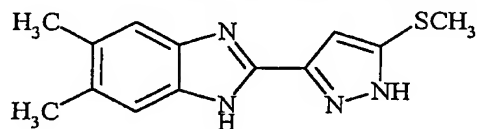
10 magnesium stearate).

Example 1 is taken as pharmaceutical preparation example, it being possible for this preparation to be produced, if desired, with other products in examples in the present application.

15

EXAMPLE 230

(a) 5,6-Dimethyl-2-(5-methylsulfanyl-1H-pyrazol-3-yl)-1H-benzoimidazole



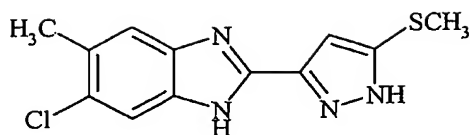
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A mixture of 5,6-dimethyl-2-(5-methylsulfanyl-1H-pyrazol-3-yl)-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzoimidazole [90mg, Reference Example 1(a)], hydrochloric acid (2mL, 4N) and ethanol (4mL) was heated at reflux temperature for 16 hours then cooled to room temperature. The pH of the reaction mixture was adjusted to 7 by addition of saturated sodium bicarbonate solution. The resulting solid was filtered, then washed with water and then dried in a vacuum oven to give 5,6-dimethyl-2-(5-methylsulfanyl-1H-pyrazol-3-yl)-1H-benzoimidazole (38mg). LC-MS (METHOD A):  $R_T = 2.22$  minutes; 259 (M+H)<sup>+</sup>.

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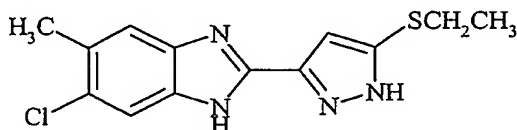
(b) 6-Chloro-5-methyl-2-(5-methylsulfanyl-1H-pyrazol-3-yl)-1H-benzoimidazole

-375-



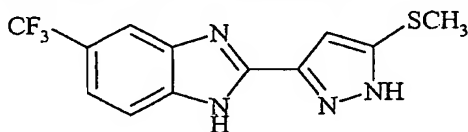
By proceeding in a similar manner to Example 230(a) above but using 6-chloro-5-methyl-2-(5-methylsulfanyl-1H-pyrazol-3-yl)-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazole [Reference Example 1(b)] there was prepared 6-chloro-5-methyl-2-(5-methylsulfanyl-1H-pyrazol-3-yl)-1H-benzimidazole.

(c) 6-Chloro-2-(5-ethylsulfanyl-1H-pyrazol-3-yl)-5-methyl-1H-benzimidazole



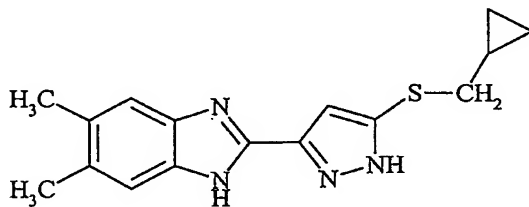
By proceeding in a similar manner to Example 230(a) above but using 6-chloro-2-(5-ethylsulfanyl-1H-pyrazol-3-yl)-5-methyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazole [Reference Example 1(c)] there was prepared 6-chloro-2-(5-ethylsulfanyl-1H-pyrazol-3-yl)-5-methyl-1H-benzimidazole.

(d) 2-(5-methylsulfanyl-1H-pyrazol-3-yl)-5-trifluoromethyl-1H-benzimidazole

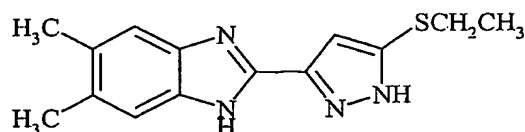


By proceeding in a similar manner to Example 230(a) above but using 2-(5-methylsulfanyl-1H-pyrazol-3-yl)-5-trifluoromethyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazole [Reference Example 1(d)] there was prepared 2-(5-methylsulfanyl-1H-pyrazol-3-yl)-5-trifluoromethyl-1H-benzimidazole.

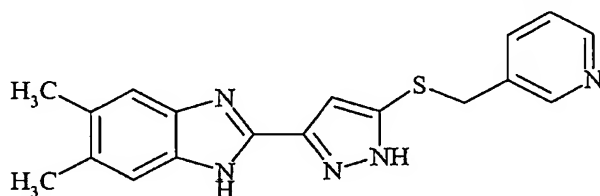
(e) 2-(5-Cyclopropylmethylsulfanyl-1H-pyrazol-3-yl)-5,6-dimethyl-1H-benzimidazole



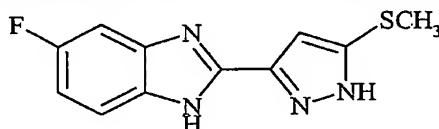
By proceeding in a similar manner to Example 230(a) above but using 2-(5-cyclopropylmethylsulfanyl-1H-pyrazol-3-yl)-5,6-dimethyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazole [Reference Example 1(e)] there was prepared 2-(5-cyclopropylmethylsulfanyl-1H-pyrazol-3-yl)-5,6-dimethyl-1H-benzimidazole. LC-MS (METHOD A):  $R_T = 2.47$  minutes; 299 (M+H)<sup>+</sup>.

(f) 2-(5-Ethylsulfanyl-1H-pyrazol-3-yl)-5,6-dimethyl-1H-benzoimidazole

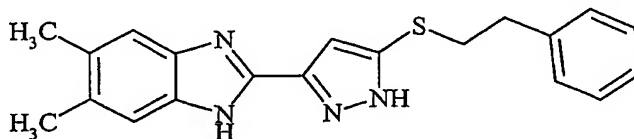
By proceeding in a similar manner to Example 230(a) above but using 5,6-dimethyl-2-(5-ethylsulfanyl-1H-pyrazol-3-yl)-1-(2-trimethylsilanyl-ethoxymethyl)-1H-benzoimidazole [Reference Example 1(f)] there was prepared 2-(5-ethylsulfanyl-1H-pyrazol-3-yl)-5,6-dimethyl-1H-benzoimidazole. LC-MS (METHOD A):  $R_T = 2.32$  minutes; 273 (M+H)<sup>+</sup>.

(g) 5,6-Dimethyl-2-[5-(pyridin-3-yl)methylsulfanyl]-1H-pyrazol-3-yl]-1H-benzoimidazole

By proceeding in a similar manner to Example 230(a) above but using 5,6-dimethyl-2-[5-(pyridin-3-yl)methylsulfanyl-1H-pyrazol-3-yl]-1-(2-trimethylsilanyl-ethoxymethyl)-1H-benzoimidazole [Reference Example 1(g)] there was prepared 5,6-dimethyl-2-[5-(pyridin-3-yl)methylsulfanyl]-1H-pyrazol-3-yl]-1H-benzoimidazole as a colourless solid.

(h) 5-Fluoro-2-[5-methylsulfanyl]-1H-pyrazol-3-yl]-1H-benzoimidazole

By proceeding in a similar manner to Example 230(a) above but using 5-fluoro-2-(5-methylsulfanyl-1H-pyrazol-3-yl)-1-(2-trimethylsilanyl-ethoxymethyl)-1H-benzoimidazole [Reference Example 1(h)] there was prepared 5-fluoro-2-[5-methylsulfanyl]-1H-pyrazol-3-yl]-1H-benzoimidazole. MS: 249 (M+H)<sup>+</sup>.

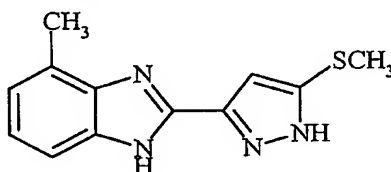
(i) 5,6-Dimethyl-2-(5-phenethylsulfanyl-1H-pyrazol-3-yl)-1H-benzoimidazole



By proceeding in a similar manner to Example 230(a) above but using 5,6-dimethyl-2-(5-phenethylsulfanyl-1H-pyrazol-3-yl)-1-(2-trimethylsilanyl-ethoxymethyl)-1H-benzoimidazole [Reference Example 1(i)] there was prepared 5,6-dimethyl-2-(5-phenethylsulfanyl-1H-pyrazol-3-yl)-1H-benzoimidazole.

5

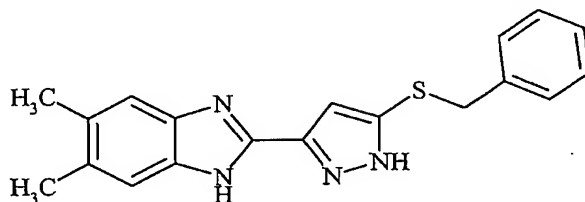
(j) 4-Methyl-2-(5-methylsulfanyl-1H-pyrazol-3-yl)-1H-benzoimidazole



By proceeding in a similar manner to Example 230(a) above but using 4-methyl-2-(5-methylsulfanyl-1H-pyrazol-3-yl)-1-(2-trimethylsilanyl-ethoxymethyl)-1H-benzoimidazole [Reference Example 1(j)] there was prepared 4-methyl-2-(5-methylsulfanyl-1H-pyrazol-3-yl)-1H-benzoimidazole. MS: 245 (M+H)<sup>+</sup>.

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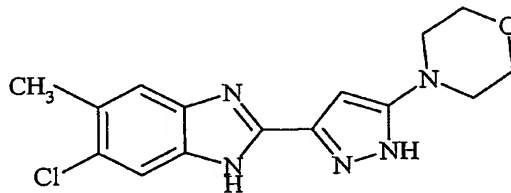
(k) 5,6-Dimethyl-2-(5-benzylsulfanyl-1H-pyrazol-3-yl)-1H-benzoimidazole



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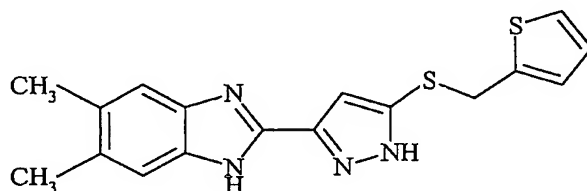
By proceeding in a similar manner to Example 230(a) above but using 2-(5-benzylsulfanyl-1H-pyrazol-3-yl)-5,6-dimethyl-1-(2-trimethylsilanyl-ethoxymethyl)-1H-benzoimidazole [Reference Example 1(k)] there was prepared 5,6-dimethyl-2-(5-benzylsulfanyl-1H-pyrazol-3-yl)-1H-benzoimidazole.

(l) 6-Chloro-5-methyl-2-(5-morpholin-4-yl-1H-pyrazol-3-yl)-1H-benzoimidazole

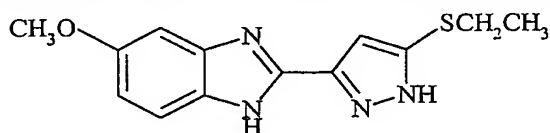


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By proceeding in a similar manner to Example 230(a) above but using 6-chloro-5-methyl-2-(5-morpholin-4-yl-1H-pyrazol-3-yl)-1-(2-trimethylsilanyl-ethoxymethyl)-1H-benzoimidazole [Reference Example 1(l)] there was prepared 6-chloro-5-methyl-2-(5-morpholin-4-yl-1H-pyrazol-3-yl)-1H-benzoimidazole.

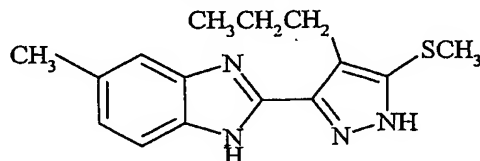
(m) 5,6-Dimethyl-2-[5-(thiophen-2-ylmethylsulfanyl)-1H-pyrazol-3-yl]-1H-benzimidazole

By proceeding in a similar manner to Example 230(a) above but using 5,6-dimethyl-2-[5-(thiophen-2-ylmethylsulfanyl)-1H-pyrazol-3-yl]-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazole [Reference Example 1(m)] there was prepared 5,6-dimethyl-2-[5-(thiophen-2-ylmethylsulfanyl)-1H-pyrazol-3-yl]-1H-benzimidazole.

EXAMPLE 23110 (2-(5-Ethylsulfanyl-1H-pyrazol-3-yl)-5-methoxy-1H-benzimidazole hydrochloride

A mixture of 3,3-bis-ethylsulfanyl-1-[5-methoxy-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazol-2-yl]-propanone [ $\sim 0.78$ mmole, Reference Example 2(j)] and hydrazine hydrate (500 $\mu$ L) in ethanol (6mL) was heated at reflux temperature for 18 hours, then evaporated. The residue was  
 15 purified on the Flashmaster to give 2-(5-ethylsulfanyl-1H-pyrazol-3-yl)-5-methoxy-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazole which was treated with ethanol (6mL) and hydrochloric acid (3mL). This mixture was heated at reflux temperature for 18 hours and then evaporated to give 2-(5-ethylsulfanyl-1H-pyrazol-3-yl)-5-methoxy-1H-benzimidazole hydrochloride.  
 LC-MS (METHOD A):  $R_T = 2.17$  minutes; 275 (M+H) $^+$ .

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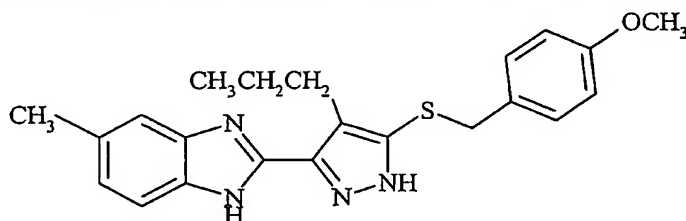
EXAMPLE 232(a) 5-Methyl-2-(5-methylsulfanyl-4-propyl-1H-pyrazol-3-yl)-1H-benzimidazole

A mixture of 2-(bis-methylsulfanyl-methylene)-1-(5-methyl-1H-benzimidazol-2-yl)-pentan-1-one  
 25 [ $\sim 0.49$ mmole, Reference Example 2(l)] and hydrazine hydrate (200 $\mu$ L) in ethanol (6mL) was heated at reflux temperature for 2 days, then evaporated. The mixture was then treated with hydrochloric acid

(4mL, 4N) and heating was continued at reflux temperature for a further 24 hours. The reaction mixture was cooled, then neutralised by addition of sodium hydroxide solution (4N) and then extracted with dichloromethane. The extract was evaporated to give 5-methyl-2-(5-methylsulfanyl-4-propyl-1H-pyrazol-3-yl)-1H-benzoimidazole. MS: 287 (M+H)<sup>+</sup>.

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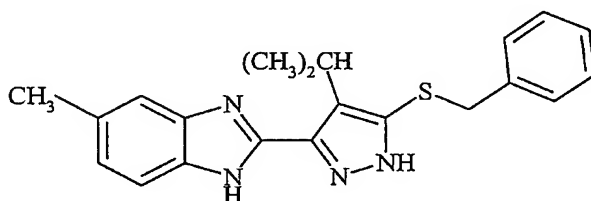
(b) 2-(5-(4-methoxy-benzylsulfanyl)-4-propyl-1H-pyrazol-3-yl)-5-methyl-1H-benzoimidazole



By proceeding in a similar manner to Example 233(a) above but using 2-[bis-(4-methoxy-benzylsulfanyl)-methylene]-1-(5-methyl-1H-benzoimidazol-2-yl)-pentan-1-one [Reference Example 2(m)] there was prepared 2-(5-(4-methoxy-benzylsulfanyl)-4-propyl-1H-pyrazol-3-yl)-5-methyl-1H-benzoimidazole. MS: 393 (M+H)<sup>+</sup>.

10

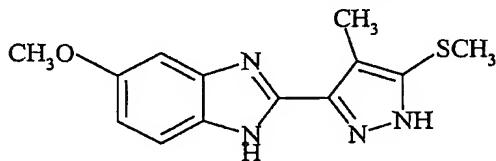
(c) 2-(5-Benzylsulfanyl-4-isopropyl-1H-pyrazol-3-yl)-5-methyl-1H-benzoimidazole



By proceeding in a similar manner to Example 232(a) above but using 2-(bis-benzylsulfanyl-methylene)-3-methyl-1-[5-methyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzoimidazol-2-yl]-butan-1-one [Reference Example (2n)] there was prepared 2-(5-benzylsulfanyl-4-isopropyl-1H-pyrazol-3-yl)-5-methyl-1H-benzoimidazole. MS: 363 (M+H)<sup>+</sup>.

15

(d) 2-(5-Methylsulfanyl-4-methyl-1H-pyrazol-3-yl)-5-methoxy-1H-benzoimidazole



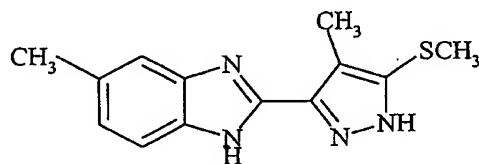
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By proceeding in a similar manner to Example 232(a) above but using 1-[5-methoxy-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzoimidazol-2-yl]-2-methyl-3-(bis-methanesulfanyl)-1-

-380-

propenone [Reference Example 2(r)] there was prepared 2-(5-methylsulfanyl-4-methyl-1H-pyrazol-3-yl)-5-methoxy-1H-benzoimidazole.

(e) 2-(5-Methylsulfanyl-4-methyl-1H-pyrazol-3-yl)-5-methyl-1H-benzoimidazole



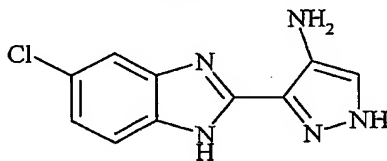
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By proceeding in a similar manner to Example 232(a) above but using 1-[5-methyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzoimidazol-2-yl]-2-methyl-3-(bis-methanesulfanyl)-1-propenone [Reference Example 2(t)] there was prepared 2-(5-methylsulfanyl-4-methyl-1H-pyrazol-3-yl)-5-methyl-1H-benzoimidazole.

10

#### EXAMPLE 233

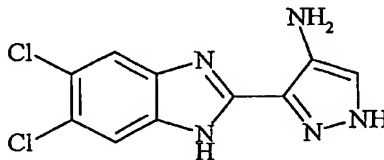
(a) 3-(5-Chloro-1H-benzoimidazol-2-yl)-1H-pyrazol-4-ylamine



A solution of 5-chloro-2-(4-nitro-1H-pyrazol-3-yl)-1H-benzoimidazole [91mg, Example 239(a)] in ethanol (40mL), under nitrogen, was treated with palladium on carbon (spatula tip, 5%). The mixture was stirred under hydrogen for 3 hours and then filtered through Celite. The filter pad was washed well with dichloromethane. The combined filtrate and washings were evaporated to give 3-(5-chloro-1H-benzoimidazol-2-yl)-1H-pyrazol-4-ylamine (116mg). LC-MS (METHOD A):  $R_T = 2$  minutes; 234 (M+H)<sup>+</sup>.

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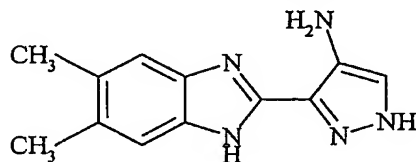
(b) 3-(5,6-Dichloro-1H-benzoimidazol-2-yl)-1H-pyrazol-4-ylamine



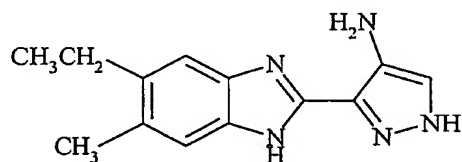
By proceeding in a similar manner to Example 233(a) above but using 5,6-dichloro-2-(4-nitro-1H-pyrazol-3-yl)-1H-benzoimidazole [Example 239(b)] there was prepared 3-(5,6-dichloro-1H-benzoimidazol-2-yl)-1H-pyrazol-4-ylamine. LC-MS (METHOD A):  $R_T = 2.37$  minutes; 268 (M+H)<sup>+</sup>.

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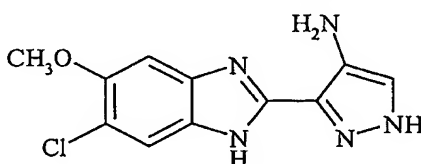
-381-

(c) 3-(5,6-Dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-ylamine

- By proceeding in a similar manner to Example 233(a) above but using 5,6-dimethyl-2-(4-nitro-1H-pyrazol-3-yl)-1H-benzoimidazole [Example 249(a)] there was prepared 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-ylamine as a brown solid. LC-MS (METHOD B):  $R_T = 2.29$  minutes; 228.25 (M+H)<sup>+</sup>.

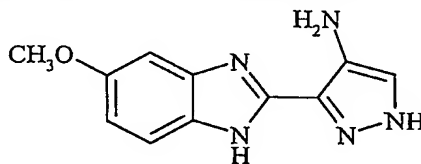
(d) 3-(5-Ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-ylamine

- By proceeding in a similar manner to Example 233(a) above but using 5-ethyl-6-methyl-2-(4-nitro-1H-pyrazol-3-yl)-1H-benzoimidazole [Example 249(b)] there was prepared 3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-ylamine as a brown solid. LC-MS (METHOD B):  $R_T = 2.14$  minutes, 242.20 (M+H)<sup>+</sup>.

15 (e) 3-(6-chloro-5-methoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-ylamine

By proceeding in a similar manner to Example 233(a) above but using 6-chloro-5-methoxy-2-(4-nitro-1H-pyrazol-3-yl)-1H-benzoimidazole [0.7g, Example 249(c)] there was prepared 3-(6-chloro-5-methoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-ylamine (0.54 g) as a brown foam. MS 264 (M+H)<sup>+</sup>.

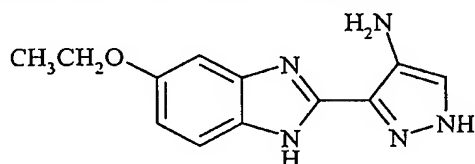
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(f) 3-(5-Methoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-ylamine

By proceeding in a similar manner to Example 233(a) above but using 5-methoxy-2-(4-nitro-1H-pyrazol-3-yl)-1H-benzimidazole [373mg, Example 257(f)] there was prepared 3-(5-methoxy-1H-benzimidazol-2-yl)-1H-pyrazol-4-ylamine (257mg) as a dark brown solid. LC-MS (Method H):  $R_T$  = 1.23 minutes, 230.25 (M+H)<sup>+</sup>, 228.25 (M-H)<sup>-</sup>.

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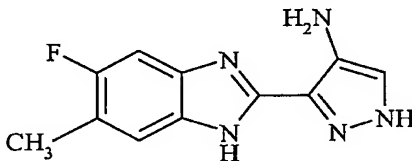
(g) 3-(5-Ethoxy-1H-benzimidazol-2-yl)-1H-pyrazol-4-ylamine



By proceeding in a manner similar to Example 233(a) above but using 5-ethoxy-2-(4-nitro-1H-pyrazol-3-yl)-1H-benzimidazole [407mg, Example 252(c)] there was prepared 3-(5-ethoxy-1H-benzimidazol-2-yl)-1H-pyrazol-4-ylamine (375mg) as a dark brown oil. LC-MS (Method H):  $R_T$  = 1.43 minutes, 244.26 (M+H)<sup>+</sup>, 242.28 (M-H)<sup>-</sup>.

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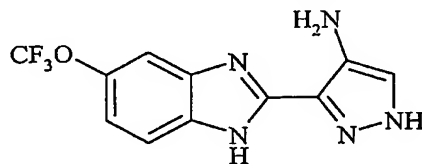
(h) 3-(5-Fluoro-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-ylamine



By proceeding in a manner similar to Example 233(a) above but using 5-fluoro-6-methyl-2-(4-nitro-1H-pyrazol-3-yl)-1H-benzimidazole [Example 249(d)] there was prepared 3-(5-fluoro-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-ylamine (0.590g) as a brown solid. LC-MS (METHOD J):  $R_T$  = 2.25 minutes, MS: 232.29 (M+H)<sup>+</sup>.

15

(i) 3-(5-Trifluoromethoxy-1H-benzimidazol-2-yl)-1H-pyrazol-4-ylamine

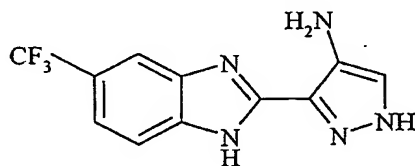


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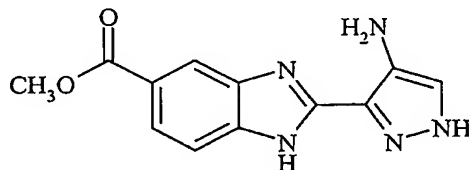
By proceeding in a manner similar to Example 233(a) above but using 5-trifluoromethoxy-2-(4-nitro-1H-pyrazol-3-yl)-1H-benzimidazole [Example 249(e)] there was prepared 3-(5-trifluoromethoxy-1H-benzimidazol-2-yl)-1H-pyrazol-4-ylamine (0.920g) as a brown solid. LC-MS (METHOD J):  $R_T$  =

25

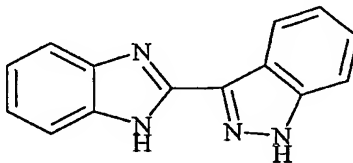
2.76 minutes, 284.23 (M+H)<sup>+</sup>.

(j) 3-(5-Trifluoromethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-ylamine

By proceeding in a manner similar to Example 233(a) above but using 5-trifluoromethyl-2-(4-nitro-1H-pyrazol-3-yl)-1H-benzoimidazole [Example 249(f)] there was prepared 3-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-ylamine (0.150g) as a brown solid. LC-MS (METHOD B):  $R_T = 3.00$  minutes, 268.16 (M+H)<sup>+</sup>.

(k) 2-(4-Amino-1H-pyrazol-3-yl)-1H-benzoimidazole-5-carboxylic acid methyl ester

By proceeding in a manner similar to Example 233(a) above but using 2-(4-nitro-1H-pyrazol-3-yl)-1H-benzoimidazole-5-carboxylic acid methyl ester [Example 249(h)] there was prepared 2-(4-amino-1H-pyrazol-3-yl)-1H-benzoimidazole-5-carboxylic acid methyl ester (1.10g) as an off-white solid. LC-MS (METHOD B):  $R_T = 2.40$  minutes, 258.17 (M+H)<sup>+</sup>.

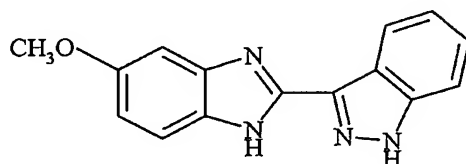
EXAMPLE 234(a) 3-(1H-Benzoimidazol-2-yl)-1H-indazole

- 20 A mixture of 1,2-diaminobenzene (108mg), indazole-3-carboxylic acid (118mg) and polyphosphoric acid (1mL) was heated at 150-160°C for 24 hours. The mixture was cooled, then diluted with ice water (10mL) and then treated with ethyl acetate (10mL). The aqueous layer was basified by addition of solid potassium carbonate. The layers were separated and the aqueous layer was extracted with ethyl acetate (10mL). The combined organic phases were dried and then evaporated. The residue was
- 25 subjected to chromatography on silica eluting with a mixture of heptane and ethyl acetate to give

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3-(1H-benzoimidazol-2-yl)-1H-indazole (78mg). LC-MS (METHOD A):  $R_T = 1.28$  minutes; 235 (M+H)<sup>+</sup>.

(b) 3-(5-Methoxy-1H-benzoimidazol-2-yl)-1H-indazole

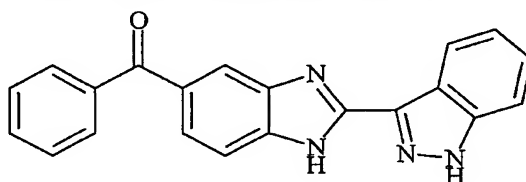


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By proceeding in a similar manner to Example 234(a) above but using 4-methoxy-1,2-diaminobenzene hydrochloride there was prepared 3-(5-methoxy-1H-benzoimidazol-2-yl)-1H-indazole as a solid.

LC-MS (METHOD A):  $R_T = 1.28$  minutes; 265 (M+H)<sup>+</sup>.

10 (c) [2-(Indazol-3-yl)-1H-benzoimidazol-5-yl]-phenyl-methanone

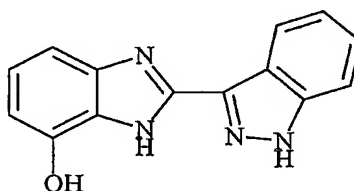


By proceeding in a similar manner to Example 234(a) above but using 3,4-diaminobenzophenone there was prepared [2-(indazol-3-yl)-1H-benzoimidazol-5-yl]-phenyl-methanone as a solid.

LC-MS (METHOD A):  $R_T = 1.73$  minutes; 339 (M+H)<sup>+</sup>.

15

(d) 2-(1H-Indazol-3-yl)-3H-benzoimidazol-4-ol



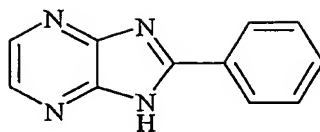
By proceeding in a similar manner to Example 234(a) above but using 2,3-diaminophenol there was prepared 2-(1H-indazol-3-yl)-3H-benzoimidazol-4-ol as a solid. LC-MS (METHOD A):  $R_T = 1.63$

20 minutes; 251 (M+H)<sup>+</sup>.

(e) 2-Phenyl-1H-imidazol[4,5-b]pyrazine



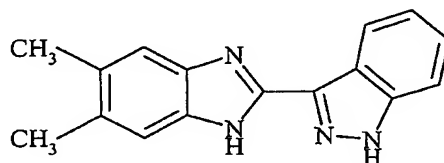
-385-



By proceeding in a similar manner to Example 234(a) above but using 2,3-diaminopyrazine [Reference Example 9] and benzoic acid there was prepared 2-phenyl-1H-imidazo[4,5-b]pyrazine as a pale brown solid, mp 239-240°C. HPLC (METHOD A1):  $R_T = 10.18$  minutes.

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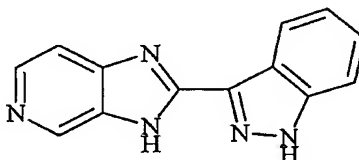
(f) 3-(5,6-Dimethyl-1H-benzoimidazol-2-yl)-1H-indazole



By proceeding in a similar manner to Example 234(a) above but using 1,2-diamino-4,5-dimethylbenzene there was prepared 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-indazole (28mg).

10 LC-MS (METHOD A):  $R_T = 1.34$  minutes; 263 (M+H)<sup>+</sup>.

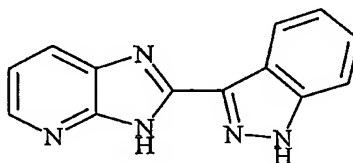
(g) 2-(1H-indazol-3-yl)-3H-imidazo[4,5-c]pyridine



By proceeding in a similar manner to Example 234(a) above but using 3,4-diaminopyridine there was

15 prepared 2-(1H-indazol-3-yl)-3H-imidazo[4,5-c]pyridine as a solid. MS: 236 (M+H)<sup>+</sup>. HPLC (METHOD A):  $R_T = 2.48$  minutes.

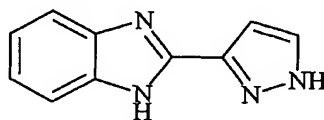
(h) 2-(1H-indazole-3-yl)-3H-imidazo[4,5-b]pyridine



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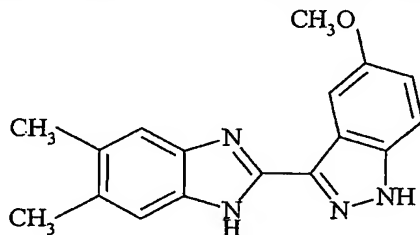
By proceeding in a similar manner to Example 234(a) above but using 2,3-diaminopyridine there was prepared 2-(1H-indazole-3-yl)-3H-imidazo[4,5-b]pyridine as a solid. MS: 236 (M+H)<sup>+</sup>. HPLC (METHOD A): R<sub>T</sub> = 2.49 minutes.

5

EXAMPLE 235(a) 2-(1H-Pyrazol-3-yl)-1H-benzimidazole

A mixture of 1H-pyrazole-3-carbaldehyde (0.961g, Reference Example 10), o-phenylenediamine (0.973g), sodium bisulfite (1.898g) and dry dimethylformamide (10mL) was stirred at reflux for 2  
10 hours, then cooled to room temperature and then poured onto cracked ice (35g). The mixture was filtered and the solid was washed with aqueous sodium bicarbonate and then with water. The solid was vacuum dried at 70°C and then recrystallised from ethanol to give 2-(1H-pyrazol-3-yl)-1H-benzimidazole (0.645g) as a pale yellowish solid, mp 335-338°C. [Elemental analysis:- C, 62.56%, H, 4.04%, N, 29.14%. Calculated for C<sub>10</sub>H<sub>8</sub>N<sub>4</sub>:- C, 65.19%, H, 4.39%, N, 30.42%].

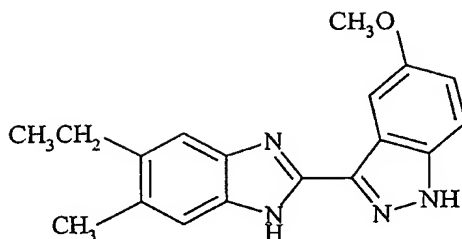
15

(b) 3-(5,6-Dimethyl-1H-benzimidazol-2-yl)-5-methoxy-1H-indazole

By proceeding in a similar manner to Example 235(a) above but using 3-formyl-5-methoxy-indazole-1-carboxylic acid *tert*-butyl ester [Reference Example 20(a)] and 4,5-dimethylbenzene-1,2-diamine there  
20 was prepared 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-5-methoxy-1H-indazole as a white solid.  
LC-MS (METHOD B): R<sub>T</sub> = 2.35 minutes; 289 (M+H)<sup>+</sup>.

(c) 3-(5-Ethyl-6-methyl-1H-benzimidazol-2-yl)-5-methoxy-1H-indazole

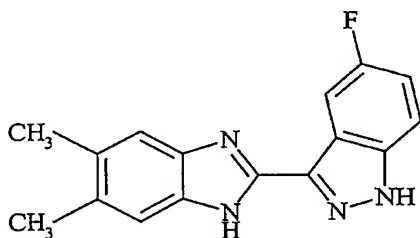
-387-



By proceeding in a manner similar to Example 235(a) above but using 3-formyl-5-methoxy-indazole-1-carboxylic acid *tert*-butyl ester [Reference Example 20(a)] and 4-ethyl-5-methyl phenylene diamine [Reference Example 30], and subjecting the reaction product to flash column chromatography on silica eluting with a mixture of ethyl acetate and 40-60 petrol (1:1, v/v), there was prepared, 3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-5-methoxy-1H-indazole as a pale yellow solid.

LC-MS (METHOD B):  $R_T = 2.48$  minutes; 307 (M+H)<sup>+</sup>.

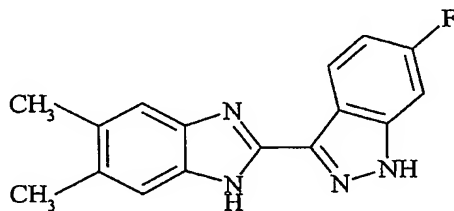
(d) 3-(5,6-Dimethyl-1H-benzoimidazol-2-yl)-5-fluoro-1H-indazole



By proceeding in a manner similar to Example 235(a) above but using 5-fluoro-1H-indazole-3-carbaldehyde [Reference Example 6(c)] and 4,5-dimethylbenzene-1,2-diamine there was prepared 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-5-fluoro-1H-indazole as a brown solid.

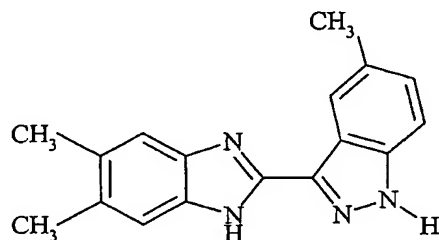
LC-MS (METHOD B):  $R_T = 2.41$  minutes; 281 (M+H)<sup>+</sup>.

(e) 3-(5,6-Dimethyl-1H-benzoimidazol-2-yl)-6-fluoro-1H-indazole

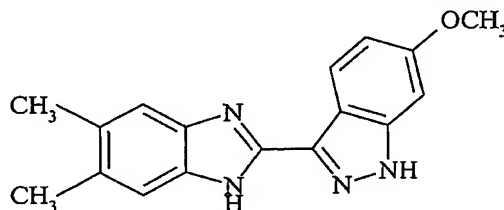


By proceeding in a manner similar to Example 235(a) above but using 6-fluoro-1H-indazole-3-carbaldehyde [Reference Example 6(d)] and 4,5-dimethylbenzene-1,2-diamine there was prepared 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-6-fluoro-1H-indazole (0.104g) as a brown solid. MS: 281

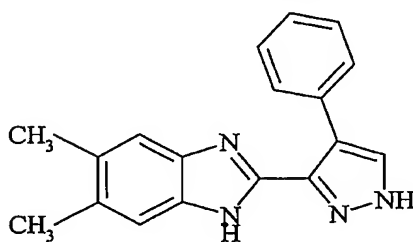
(M+H)<sup>+</sup>. HPLC (METHOD B1):  $R_T = 23.6$  minutes.

(f) 3-(5,6-Dimethyl-1H-benzoimidazol-2-yl)-5-methyl-1H-indazole

By proceeding in a manner similar to Example 235(a) above but using 5-methyl-1H-indazole-3-carbaldehyde [Reference Example 6(e)] there was prepared 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-5-methyl-1H-indazole as a brown solid. LC-MS (METHOD B):  $R_T = 2.35$  minutes; 277 (M+H)<sup>+</sup>.

(g) 3-(5,6-Dimethyl-1H-benzoimidazol-2-yl)-6-methoxy-1H-indazole

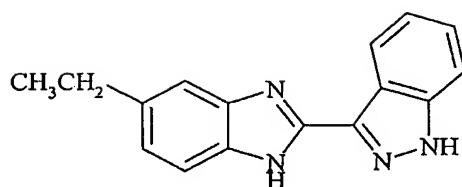
By proceeding in a manner similar to Example 235(a) above but using 6-methoxy-1H-indazole-3-carbaldehyde [Reference Example 6(f)] there was prepared 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-6-methoxy-1H-indazole as a pale orange solid. LC-MS (METHOD B):  $R_T = 2.52$  minutes; 293 (M+H)<sup>+</sup>.

(h) 5,6-Dimethyl-2-(4-phenyl-1H-pyrazol-3-yl)-1H-benzimidazole

By proceeding in a manner similar to Example 235(a) above but using 4-phenyl-1H-pyrazole-3-carbaldehyde [Reference Example 6(g)] there was prepared 5,6-dimethyl-2-(4-phenyl-1H-pyrazol-3-yl)-1H-benzimidazole as a white solid. LC-MS (METHOD B):  $R_T = 2.35$  minutes; 289 (M+H)<sup>+</sup>.

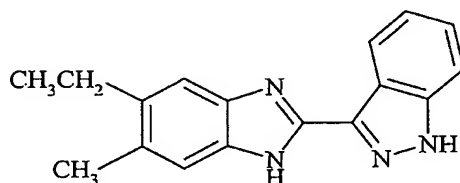
(i) 3-(5-Ethyl-1H-benzoimidazol-2-yl)-1H-indazole

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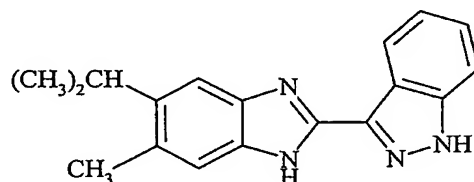
- By proceeding in a manner similar to Example 235(a) above but using 4-ethyl-phenylene diamine [Reference Example 29(a)], a reaction temperature of 160°C and subjecting the reaction product to flash column chromatography on silica eluting with a mixture of ethyl acetate and hexane (2:1) there was prepared 3-(5-ethyl-1H-benzoimidazol-2-yl)-1H-indazole as an off-white solid. LC-MS (Method D):  $R_T = 23.13$  minutes, 263.3 (M+H)<sup>+</sup>.

(j) 3-(5-Ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-indazole



- By proceeding in a manner similar to Example 235(i) above but using 4-ethyl-5-methyl-phenylene diamine [Reference Example 30(a)] there was prepared 3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-indazole as an off-white solid. LC-MS (Method D):  $R_T = 23.79$  minutes, 277.3 (M+H)<sup>+</sup>.

(k) 3-(5-Isopropyl-6-methyl-1H-benzoimidazol-2-yl)-1H-indazole

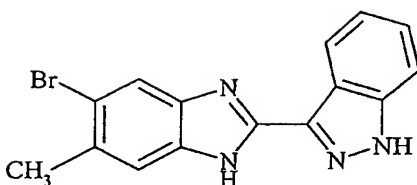


- By proceeding in a manner similar to Example 235(i) above but using 4-isopropyl-5-methyl-phenylene diamine [Reference Example 30(b)] there was prepared 3-(5-isopropyl-6-methyl-1H-benzoimidazol-2-yl)-1H-indazole as an off-white solid. MS: 291.03 (M+H)<sup>+</sup>. HPLC (METHOD B1):  $R_T = 23.39$  minutes.

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(l) 3-(5-Bromo-6-methyl-1H-benzoimidazol-2-yl)-1H-indazole

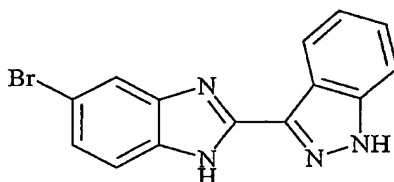
-390-



By proceeding in a manner similar to Example 235(i) above but using 4-bromo-5-methyl-phenylene diamine [Reference Example 30(c)] there was prepared 3-(5-bromo-6-methyl-1H-benzoimidazol-2-yl)-1H-indazole as an off-white solid. MS: 329.09 (M+H)<sup>+</sup>. HPLC (METHOD B1): R<sub>T</sub> = 22.74 minutes.

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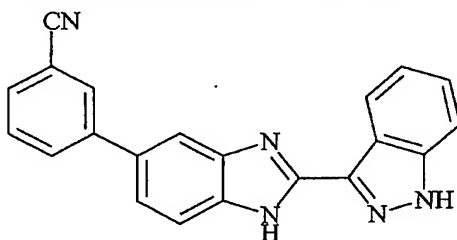
(m) 3-(5-Bromo-1H-benzoimidazol-2-yl)-1H-indazole



By proceeding in a manner similar to Example 235(i) above but using 4-bromo-phenylene diamine [Reference Example 30(e)] there was prepared 3-(5-bromo-1H-benzoimidazol-2-yl)-1H-indazole as a brown solid. LC-MS (Method D): R<sub>T</sub> = 23.46 minutes, 315.15 (M+H)<sup>+</sup>.

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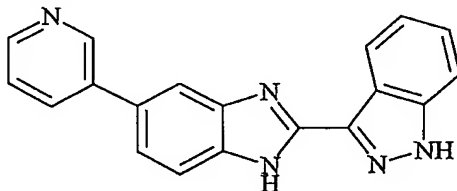
(n) 3-(5-(3-Cyano)phenyl-1H-benzoimidazol-2-yl)-1H-indazole



By proceeding in a manner similar to Example 235(i) above but using 3',4'-diaminobiphenyl-3-carbonitrile [Reference Example 30(f)] there was prepared 3-(5-(3-cyano)phenyl-1H-benzoimidazol-2-yl)-1H-indazole as a white solid. MS: 335.3 (M+H)<sup>+</sup>. HPLC (METHOD B1): R<sub>T</sub> = 21.47 minutes.

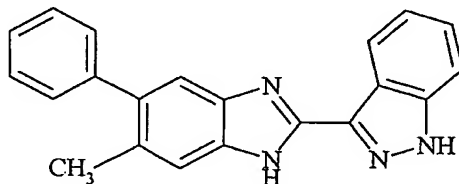
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(o) 3-(5-(Pyrid-3-yl)-1H-benzoimidazol-2-yl)-1H-indazole



By proceeding in a manner similar to Example 235(i) above but using 4-(pyridine-3-yl) benzene-1,2-diamine [Reference Example 30(g)] there was prepared 3-(5-(pyrid-3-yl)-1H-benzimidazol-2-yl)-1H-indazole as a white solid. MS: 312.2 (M+H)<sup>+</sup>. HPLC (METHOD B1): R<sub>T</sub> = 8.58 minutes.

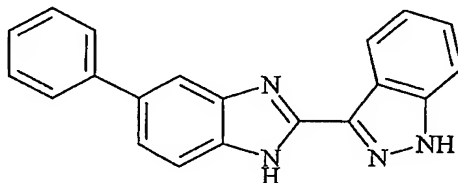
5 (p) 3-(6-Methyl-5-phenyl-1H-benzimidazol-2-yl)-1H-indazole



By proceeding in a manner similar to Example 235(i) above but using 6-methylbiphenyl-3,4-diamine [Reference Example 30(h)] there was prepared 3-(6-methyl-5-phenyl-1H-benzimidazol-2-yl)-1H-indazole as a white solid. MS: 325.3 (M+H)<sup>+</sup>. HPLC (METHOD B1): R<sub>T</sub> = 14.48 minutes.

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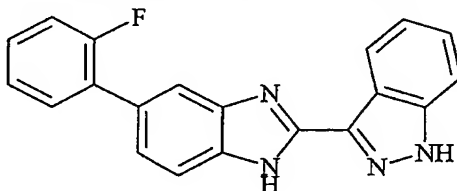
(q) 3-(5-Phenyl-1H-benzimidazol-2-yl)-1H-indazole



By proceeding in a manner similar to Example 235(i) above but using 4-biphenyl-3,4-diamine [Reference Example 30(i)] there was prepared 3-(5-phenyl-1H-benzimidazol-2-yl)-1H-indazole as a white solid. MS: 311.2 (M+H)<sup>+</sup>. HPLC (Method D): R<sub>T</sub> = 24.54 minutes.

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(r) 3-(5-(2-Fluoro)phenyl-1H-benzimidazol-2-yl)-1H-indazole

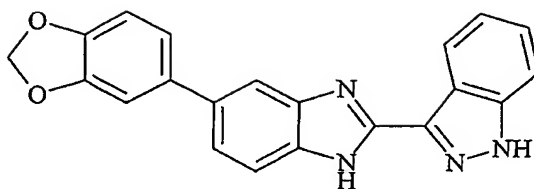


By proceeding in a manner similar to Example 235(i) above but using 2'-fluorobiphenyl-3,4-diamine diamine [Reference Example 30(j)] there was prepared 3-(5-(2-fluoro)phenyl-1H-benzimidazol-2-yl)-1H-indazole as a white solid. MS: 329.2 (M+H)<sup>+</sup>. HPLC (METHOD B1): R<sub>T</sub> = 22.54 minutes.

20

(s) 3-(5-(3,4-methylenedioxy)phenyl-1H-benzimidazol-2-yl)-1H-indazole

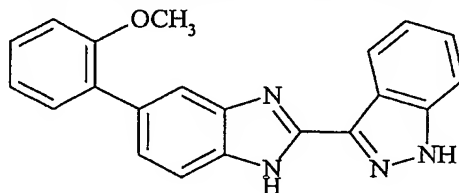
-392-



By proceeding in a manner similar to Example 235(i) above but using 4-benzo[1,3]dioxol-5-ylbenzene-1,2-diamine [Reference Example 30(k)] there was prepared 3-(5-(5,6-methylenedioxy)phenyl)-1H-benzoimidazol-2-yl)-1H-indazole as a white solid. MS: 355.2 (M+H)<sup>+</sup>. HPLC (METHOD B1): R<sub>T</sub> =

5 22.04 minutes.

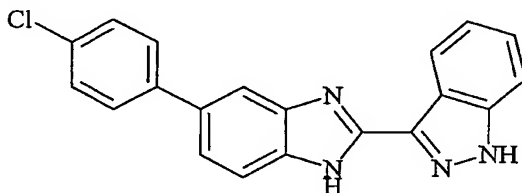
(t) 3-(5-(2-Methoxy)phenyl)-1H-benzoimidazol-2-yl)-1H-indazole



By proceeding in a manner similar to Example 235(i) above but using 2'-methoxybiphenyl-3,4-diamine [Reference Example 30(l)] there was prepared 3-(5-(2-methoxy)phenyl)-1H-benzoimidazol-2-yl)-1H-indazole as a white solid. MS: 341.2 (M+H)<sup>+</sup>. HPLC (METHOD B1): R<sub>T</sub> = 22.09 minutes.

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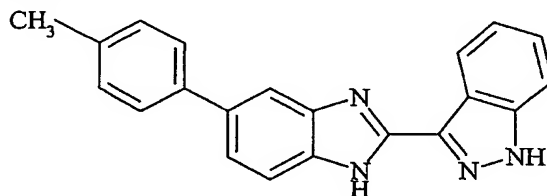
(u) 3-(5-(4-Chloro)phenyl)-1H-benzoimidazol-2-yl)-1H-indazole



By proceeding in a manner similar to Example 235(i) above but using 4'-chlorobiphenyl-3,4-diamine [Reference Example 30(m)] there was prepared 3-(5-(4-chloro)phenyl)-1H-benzoimidazol-2-yl)-1H-indazole as a white solid. MS: 345.2 (M+H)<sup>+</sup>. HPLC (METHOD B1): R<sub>T</sub> = 23.71 minutes.

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(v) 3-(5-(4-Methyl)phenyl)-1H-benzoimidazol-2-yl)-1H-indazole

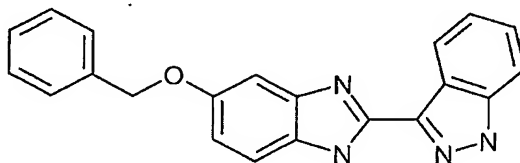


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By proceeding in a manner similar to Example 235(i) above but using 4'-methylbiphenyl-3,4-diamine [Reference Example 30(n)] there was prepared 3-(5-(4-methylphenyl)-1H-benzoimidazol-2-yl)-1H-indazole as a white solid. MS: 325.1 (M+H)<sup>+</sup>. HPLC (METHOD C1): R<sub>T</sub> = 15.22 minutes.

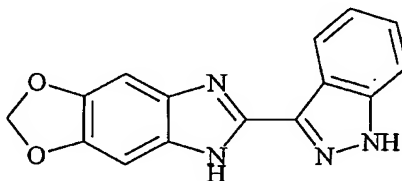
5 (w) 3-(5-Benzyloxy-1H-benzoimidazol-2-yl)-1H-indazole



By proceeding in a manner similar to Example 235(i) above but using 4-benzyloxybenzene-1,2-diamine [Reference Example 30(o)] there was prepared 3-(5-benzyloxy-1H-benzoimidazol-2-yl)-1H-indazole as a white solid. MS: 339.3 (M+H)<sup>+</sup>. HPLC (METHOD B1): R<sub>T</sub> = 22.32 minutes.

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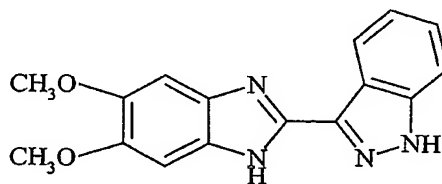
(x) 3-(5,6-Methylenedioxy-1H-benzoimidazol-2-yl)-1H-indazole



By proceeding in a manner similar to Example 235(i) above but using benzo[1,3]dioxole-5,6-diamine [Reference Example 30(p)] there was prepared 3-(5,6-methylenedioxy-1H-benzoimidazol-2-yl)-1H-

15 indazole as a white solid. LC-MS (METHOD B): R<sub>T</sub> = 2.25 minutes; 279.22 (M+H)<sup>+</sup>.

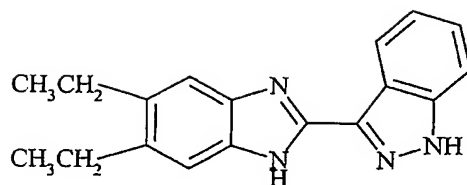
(y) 3-(5,6-Dimethoxy-1H-benzoimidazol-2-yl)-1H-indazole



By proceeding in a manner similar to Example 235(i) above but using 4,5-dimethoxybenzene-1,2-diamine [Reference Example 30(q)] there was prepared 3-(5,6-dimethoxy-1H-benzoimidazol-2-yl)-1H-  
20 indazole as a white solid. LC-MS (METHOD B): R<sub>T</sub> = 2.16 minutes; 295.26 (M+H)<sup>+</sup>.

(z) 3-(5,6-Diethyl-1H-benzoimidazol-2-yl)-1H-indazole

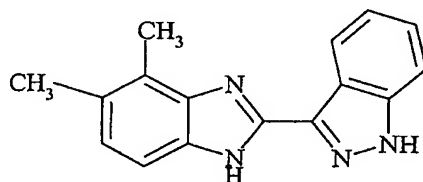
-394-



By proceeding in a manner similar to Example 235(i) above but using 4,5-diethylbenzene-1,2-diamine [Reference Example 30(r)] there was prepared 3-(5,6-diethyl-1H-benzimidazol-2-yl)-1H-indazole as a white solid. LC-MS (METHOD B):  $R_T = 2.49$  minutes;  $291.32 (M+H)^+$ .

5

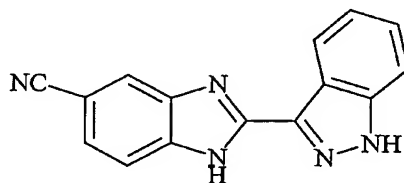
(aa) 3-(4,5-Dimethyl-1H-benzimidazol-2-yl)-1H-indazole



By proceeding in a manner similar to Example 235(i) above but using 3,4-dimethylbenzene-1,2-diamine there was prepared 3-(4,5-dimethyl-1H-benzimidazol-2-yl)-1H-indazole as a white solid.

10 LC-MS (METHOD B):  $R_T = 2.31$  minutes;  $263.24 (M+H)^+$ .

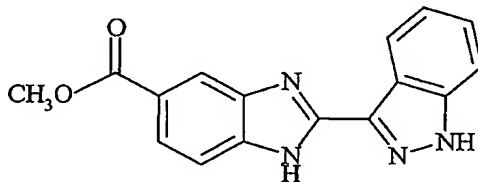
(ab) 2-(1H-Indazol-3-yl)-1H-benzimidazole-5-carbonitrile



15 By proceeding in a manner similar to Example 235(i) above but using 3,4-diaminobenzonitrile amine there was prepared 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carbonitrile as a white solid.

LC-MS (Method D):  $R_T = 21.81$  minutes, MS:  $260.10 (M+H)^+$ .

(ac) 3-(5-methoxycarbonyl-1H-benzimidazol-2-yl)-1H-indazole

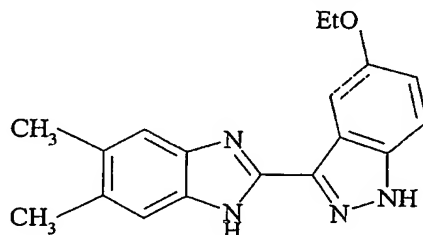


-395-

By proceeding in a manner similar to Example 235(i) above but using 3,4-diaminobenzoic acid, methyl ester there was prepared 3-(5-methoxycarbonyl-1H-benzoimidazol-2-yl)-1H-indazole as a white solid.

LC-MS (Method D):  $R_T = 22.13$  minutes, 293.16 (M+H)<sup>+</sup>.

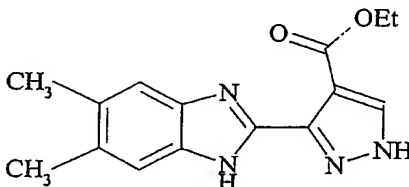
5 (ad) 3-(5,6-Dimethyl-1H-benzoimidazol-2-yl)-5-ethoxy-1H-indazole



By proceeding in a manner similar to Example 235(a) above but using 5-ethoxy-3-formyl-indazole-1-carboxylic acid *tert*-butyl ester [Reference Example 20(d)] there was prepared 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-5-ethoxy-1H-indazole as a pale orange solid. MS: 307 (M+H)<sup>+</sup>. HPLC

10 (METHOD B1):  $R_T = 13.58$  minutes.

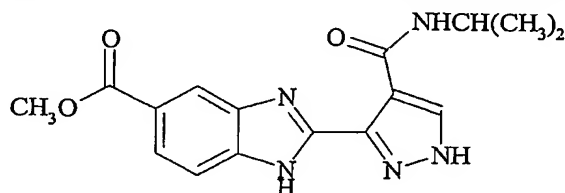
(ae) 3-(5,6-Dimethyl-1H-benzoimidazol-2-yl)-pyrazole-4-carboxylic acid ethyl ester



By proceeding in a manner similar to Example 235(a) above but using 3-formyl-pyrazole-4-carboxylic acid ethyl ester [Reference Example 6(i)] there was prepared 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-pyrazole-4-carboxylic acid ethyl ester as a pale brown solid. LC-MS (METHOD B): 2.56 minutes; 285 (M+H)<sup>+</sup>.

15

(af) 2-(4-Isopropylcarbamoyl-1H-pyrazol-3-yl)-1H-benzoimidazole-5-carboxylic acid methyl ester

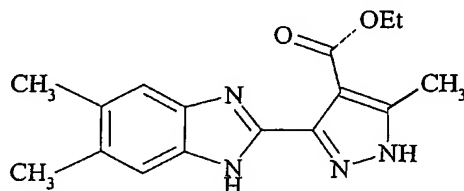


20

By proceeding in a manner similar to Example 235(a) above but using 3-formyl-pyrazole-4-carboxylic acid isopropylamide [Reference Example 6(j)] and methyl-3,4-diamino benzoate there was prepared 2-

(4-isopropylcarbamoyl-1H-pyrazol-3-yl)-1H-benzimidazole-5-carboxylic acid methyl ester as a yellow solid. LC-MS (METHOD B): 2.99 minutes; 328 (M+H)<sup>+</sup>.

(ag) 3-(5,6-Dimethyl-1H-benzimidazol-2-yl)-5-methyl-pyrazole-4-carboxylic acid ethyl ester

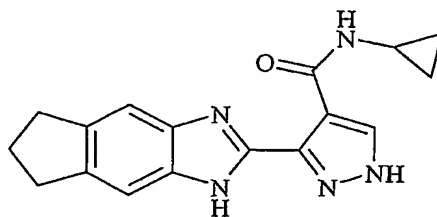


5

By proceeding in a manner similar to Example 235(a) above but using 3-formyl-5-methyl-pyrazole-4-carboxylic acid ethyl ester [Reference Example 6(k)] there was prepared 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-5-methyl-pyrazole-4-carboxylic acid ethyl ester as a white solid. LC-MS (METHOD B): R<sub>T</sub> = 2.59 minutes; 299 (M+H)<sup>+</sup>.

10

(ah) 3-(1,5,6,7-Tetrahydro-1,3-diaza-s-indacen-2-yl)-1H-pyrazole-4-carboxylic acid cyclopropylamide

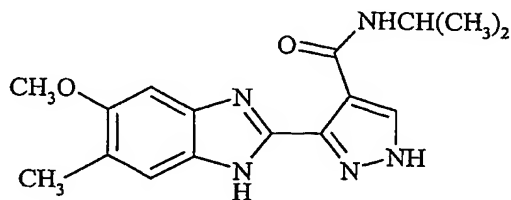


15

By proceeding in a manner similar to Example 235(a) above but using indane-5,6-diamine (130mg) and 3-formyl-1H-pyrazole-4-carboxylic acid cyclopropylamide [150 mg, Reference Example 6(q)] and subjecting the reaction product to chromatography on silica [eluting with ethyl acetate/ gradient 75 to 0%heptane] followed by trituration with acetone, there was prepared 3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1H-pyrazole-4-carboxylic acid cyclopropylamide (31mg) as a white solid. LC-MS (Method A): R<sub>T</sub> = 2.85 minutes, 308 (M+H)<sup>+</sup>.

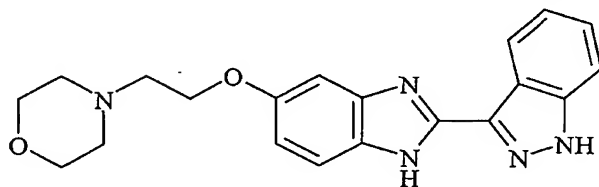
20

(ai) 3-(5-Methoxy-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isopropylamide



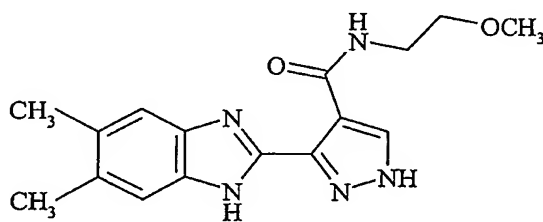
By proceeding in a manner similar to Example 235(a) above but using 3-formyl-pyrazole-4-carboxylic acid isopropylamide [198mg, Reference Example 6(j)] and 4-methoxy-5-methyl-benzene-1,2-diamine [166mg, Reference Example 29(b)] and subjecting the reaction product to flash chromatography on silica eluting with dichloromethane/methanol (95:5) followed by recrystallisation from a mixture of ethyl acetate and n-pentane there was prepared 3-(5-methoxy-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isopropylamide (145mg) as a white solid. LC-MS (Method H):  $R_T = 2.09$  minutes, 314.27 (M+H)<sup>+</sup>, 312.29 (M-H)<sup>-</sup>.

(aj) 3-[5-(2-Morpholin-4-yl-ethoxy)-1H-benzoimidazol-2-yl]-1H-indazole



By proceeding in a manner similar to Example 235(i) above but using 4-(2-morpholin-4-yl-ethoxy)-benzene-1,2-diamine [Reference Example 29(c)] and subjecting the reaction product to preparative LC-MS there was prepared 3-[5-(2-morpholin-4-yl-ethoxy)-1H-benzoimidazol-2-yl]-1H-indazole (25mg) as a white solid. MS: 364 (M+H)<sup>+</sup>. HPLC (METHOD B1):  $R_T = 19.38$  minutes.

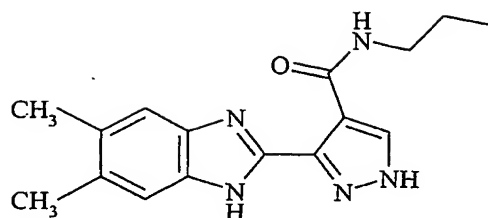
(ak) 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid (2-methoxy-ethyl)-amide



By proceeding in a manner similar to Example 235(i) above but using 4,5-dimethylbenzene-1,2-diamine and 3-formyl-1H-pyrazole-4-carboxylic acid (2-methoxy-ethyl)-amide [Reference Example 6(n)] there was prepared 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid (2-methoxy-ethyl)-amide (87mg) as a cream solid. LC-MS (METHOD L):  $R_T = 4.23$  minutes, 314.2 (M+H)<sup>+</sup>.

(al) 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid propylamide

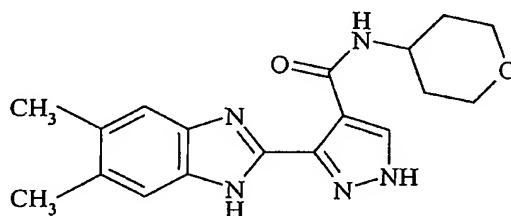
-398-



By proceeding in a manner similar to Example 6(i) above but using 4,5-dimethylbenzene-1,2-diamine and 3-formyl-1H-pyrazole-4-carboxylic acid propylamide [Reference Example 6(o)] there was prepared 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid propylamide (73mg)

5 as a pale yellow solid. LC-MS (METHOD L):  $R_T = 4.94$  minutes,  $298.29$  (M+H)<sup>+</sup>.

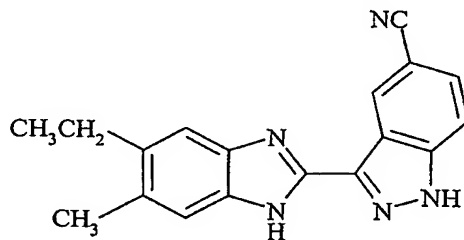
(am) 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid (tetrahydro-pyran-4-yl)-amide



10 By proceeding in a manner similar to Example 235(i) above but using 4,5-dimethyl-1,2-phenylenediamine and 3-formyl-1H-pyrazole-4-carboxylic acid (tetrahydro-pyran-4-yl)-amide [Reference Example 6(p)] and recrystallising the reaction product from methanol there was prepared 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid (tetrahydro-pyran-4-yl)-amide (228mg) as a white solid. LC-MS (METHOD R):  $R_T = 9.40$  minutes,  $360$  (M+H)<sup>+</sup>.

15

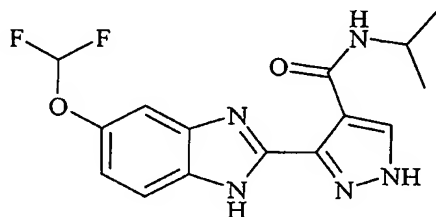
(an) 3-(5-Ethyl-6-methyl-1H-benzimidazol-2-yl)-1H-indazole-5-carbonitrile



20 By proceeding in a manner similar to Example 235(i) above but using 4-ethyl-5-methyl-phenylene diamine [Reference Example 30(a)] and 3-formyl-1H-indazole-5-carbonitrile [Reference Example 68]

there was prepared 3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-indazole-5-carbonitrile (133mg) as a pale yellow solid. MS: 302 (M+H)<sup>+</sup>. HPLC (METHOD B1): R<sub>T</sub> = 16.45 minutes.

(ao) 3-(5-Difluoromethoxy-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isopropylamide

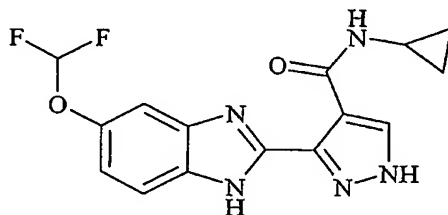


5

By proceeding in a manner similar to Example 235(i) above but using 4-difluoromethoxy-benzene-1,2-diamine [Reference Example 30(y)] and 3-formyl-pyrazole-4-carboxylic acid isopropylamide [Reference Example 6(j)] there was prepared 3-(5-difluoromethoxy-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isopropylamide (118mg) as a white solid. LC-MS (METHOD L): R<sub>T</sub> =

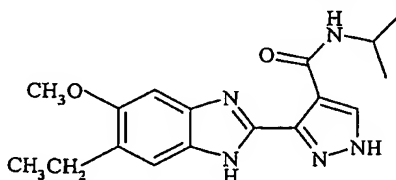
10 10.46 minutes, 336.19 (M+H)<sup>+</sup>.

(ap) 3-(5-Difluoromethoxy-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid cyclopropylamide



15 By proceeding in a manner similar to Example 235(ao) above but using 3-formyl-1H-pyrazole-4-carboxylic acid cyclopropylamide [Reference Example 6(q)] there was prepared 3-(5-difluoromethoxy-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid cyclopropylamide (63mg) as a white solid. LC-MS (METHOD L): R<sub>T</sub> = 10.18 minutes, 334.17 (M+H)<sup>+</sup>.

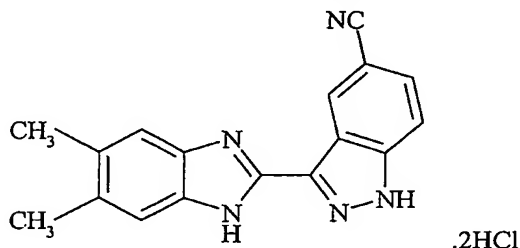
20 (aq) 3-(6-Ethyl-5-methoxy-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isopropylamide



By proceeding in a manner similar to Example 235(i) but using 4-ethyl-5-methoxy-benzene-1,2-diamine [200 mg, Reference Example 30(z)] and 3-formyl-pyrazole-4-carboxylic acid isopropylamide

[Reference Example 6(j)] there was prepared 3-(6-ethyl-5-methoxy-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isopropylamide (115 mg) as an off-white solid. LC-MS (METHOD L):  $R_T$  = 11.34 minutes, 328.24 (M+H)<sup>+</sup>.

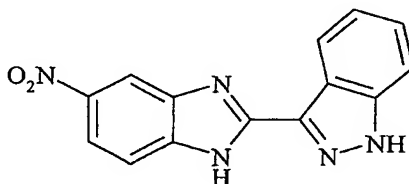
5 (ar) 3-(5,6-Dimethyl-1H-benzoimidazol-2-yl)-1H-indazole-5-carbonitrile dihydrochloride



By proceeding in a manner similar to Example 235(i) above but (i) using 4,5-dimethyl-phenylene diamine and 3-formyl-1H-indazole-5-carbonitrile [Reference Example 68] (ii) treating a suspension of the reaction product in methanol with a solution of hydrochloric acid (4M) in 1,4-dioxane followed by evaporation of the mixture (iii) trituration of the residue with methanol and (iv) recrystallisation from diethyl ether, there was prepared 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-indazole-5-carbonitrile dihydrochloride (133mg) as an off-white solid. LC-MS (METHOD B):  $R_T$  = 2.32 minutes. MS: 288 (M+H)<sup>+</sup>.

15

(as) 3-(5-nitro-1H-benzoimidazol-2-yl)-1H-indazole

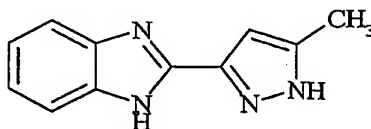


By proceeding in a manner similar to Example 235(a) above but using 4-nitrophenylenediamine there was prepared 3-(5-nitro-1H-benzoimidazol-2-yl)-1H-indazole as red solid. MS: 280.17 (M+H)<sup>+</sup>.

20 HPLC (Method B1):  $R_T$  = 3.00 minutes.

EXAMPLE 236

2-(5-Methyl-1H-pyrazol-3-yl)-1H-benzoimidazole

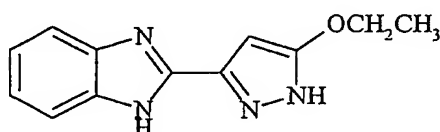




A mixture of o-phenylenediamine (1.08g) and 5-methylpyrazole-3-carboxylic acid (1.266g) was finely ground and the finely ground material was heated at 160°C for 3 hours and then cooled to ambient temperature. The reaction mixture was recrystallised from ethyl alcohol (50mL) to give a light blue solid (0.27g). The filtrate gave another crop (0.1g) on standing. The combined solids were  
 5 recrystallised from ethyl alcohol to give 2-(5-methyl-1H-pyrazol-3-yl)-1H-benzoimidazole (223mg) as a lilac coloured solid, mp 322-324°C. [Elemental analysis:- C, 66.54%; H, 4.80%; N, 28.14%. Calculated for C<sub>11</sub>H<sub>10</sub>N<sub>4</sub>:- C, 66.64%; H, 5.09%; N, 28.27%].

#### EXAMPLE 237

##### 10 2-(5-Ethoxy-1H-pyrazol-3-yl)-1H-benzoimidazole

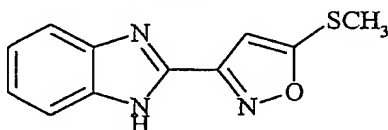


A mixture of trifluoroacetic acid (6mL) and 2-(5-ethoxy-1H-pyrazol-3-yl)-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzoimidazole (300mg, Reference Example 11) was stirred at 50°C for 1.5 hours. The reaction mixture was evaporated and the residue was partitioned between ethyl acetate and water  
 15 (pH 10). The organic layer was dried and then evaporated. The residue was subjected to chromatography on silica eluting with a mixture of dichloromethane and methanol (9:1, v/v) and then recrystallised from toluene to give 2-(5-ethoxy-1H-pyrazol-3-yl)-1H-benzoimidazole (0.1g) as a colourless solid, mp 217-219.5°C. [Elemental analysis:- C, 62.26%; H, 5.23%; N, 23.44%. Calculated for C<sub>12</sub>H<sub>12</sub>N<sub>4</sub>O:- C, 63.15%; H, 5.30%; N, 24.55%].

20

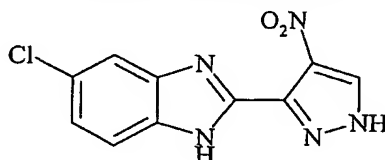
#### EXAMPLE 238

##### 2-(5-Methylsulfanyl-isoxazol-3-yl)-1H-benzoimidazole



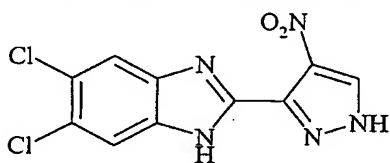
A mixture of 2-(5-methylsulfanyl-isoxazol-3-yl)-1-(2-trimethylsilyl-ethoxymethyl)-1H-  
 25 benzoimidazole (160mg, Reference Example 12), methanol (12mL) and concentrated aqueous hydrochloric acid (2.45mL) were heated at reflux for four hours, then cooled and then evaporated. The residue was treated with aqueous sodium bicarbonate and the mixture was extracted with ethyl acetate. The extracts were dried and then evaporated to give 2-(5-methylsulfanyl-isoxazol-3-yl)-1H-benzoimidazole (96mg) as an off white solid, mp 179-181°C. <sup>1</sup>H-NMR [(CD<sub>3</sub>)<sub>2</sub>SO]: δ 4.65 (s, 3H),

30 9.00 (s, 1H), 9.15-9.6 (m, 4H).

EXAMPLE 239(a) 5-Chloro-2-(4-nitro-1H-pyrazol-3-yl)-1H-benzoimidazole

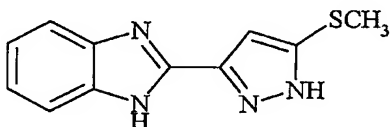
5 A solution of 4-chloro-benzene-1,2-diamine (500mg) in hydrochloric acid (4N) was treated with 4-nitro-pyrazole-3-carboxylic acid (826mg) then heated at reflux temperature, under nitrogen. The reaction mixture was cooled to room temperature when the pH was adjusted to 8 by addition of ammonium hydroxide and the mixture was extracted with ethyl acetate. The extracts were evaporated to give 5-chloro-2-(4-nitro-1H-pyrazol-3-yl)-1H-benzoimidazole.

10

(b) 5,6-dichloro-2-(4-nitro-1H-pyrazol-3-yl)-1H-benzoimidazole

By proceeding in a similar manner to Example 239(a) above but using 4,5-dichloro-1,2-diaminobenzene there was prepared 5,6-dichloro-2-(4-nitro-1H-pyrazol-3-yl)-1H-benzoimidazole.

15

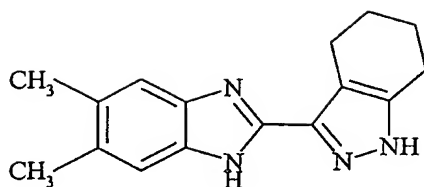
EXAMPLE 240(Benzoimidazol-2-yl)-5-methylthio-3-pyrazole

20 A mixture of 1-[(3,3-bis(methylthio))benzoimidazol-2-yl]propen-2-one [5.5g, Reference Example 15], hydrazine hydrate (1.02g) and acetonitrile (50mL) was stirred at reflux for 18 hours. The reaction mixture was cooled, and the precipitate was isolated by filtration. Recrystallisation from aqueous ethanol provided (benzoimidazol-2-yl)-5-methylthio-3-pyrazole (3.36g) as a beige crystalline solid, m.p. 242°C. [Elemental analysis: Found: C 57.8; H 4.5; N 24.0. Calculated for C<sub>11</sub>H<sub>10</sub>N<sub>4</sub>S: C 57.37; H 4.38; N 24.33].

25

EXAMPLE 241(a) 3-(5,6-Dimethyl-1H-benzoimidazol-2-yl)-4,5,6,7-tetrahydro-1H-indazole

-403-

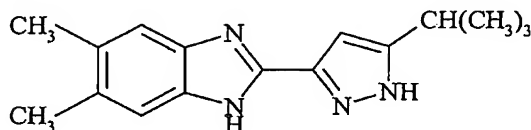


4,5-Dimethylbenzene-1,2-diamine (90mg) and 4,5,6,7-tetrahydro-1H-indazole-3-carboxylic acid [110mg, Reference Example 17(a)] were mixed in a glass vial then subjected to microwave radiation (900W, domestic oven) twice for two minutes. The resulting solid was subjected to flash column

5 chromatography on silica eluting with a mixture of ethyl acetate and hexane (85:15, v/v) to give 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-4,5,6,7-tetrahydro-1H-indazole (30mg) as a pale brown solid.

LC-MS (METHOD B):  $R_T = 2.28$  minutes; 267 (M+H)<sup>+</sup>.

(b) 2-(5-Isopropyl-1H-pyrazol-3-yl)-5,6-dimethyl-1H-benzoimidazole

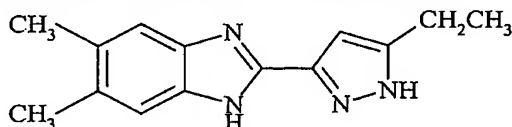


10

By proceeding in a manner similar to Example 241 (a) above, but using 5-isopropyl-1H-pyrazole-3-carboxylic acid [Reference Example 17(b)] there was prepared 2-(5-isopropyl-1H-pyrazol-3-yl)-5,6-dimethyl-1H-benzoimidazole (80mg) as a brown solid. LC-MS (METHOD B):  $R_T = 2.27$  minutes; 255 (M+H)<sup>+</sup>.

15

(c) 2-(5-Ethyl-1H-pyrazol-3-yl)-5,6-dimethyl-1H-benzoimidazole

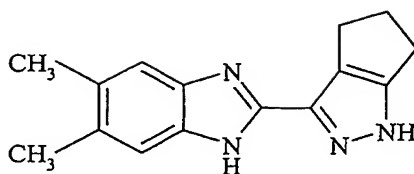


20

By proceeding in a manner similar to Example 241(a) above but using 5-ethyl-1H-pyrazole-3-carboxylic acid [Reference Example 17(c)], and triturating the brown solid reaction product with a mixture of ethyl acetate and hexane (1:1, v/v), there was prepared 2-(5-ethyl-1H-pyrazol-3-yl)-5,6-dimethyl-1H-benzoimidazole as a light brown solid. LC-MS (METHOD B):  $R_T = 2.22$  minutes; 241 (M+H)<sup>+</sup>.

(d) 5,6-Dimethyl-2-(1,4,5,6-tetrahydro-cyclopentapyrazol-3-yl)-1H-benzoimidazole

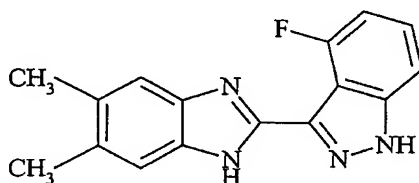
-404-



By proceeding in a manner similar to Example 214(a) above but using 1,4,5,6-tetrahydrocyclopentapyrazole-3-carboxylic acid [Reference Example 17(f)] and triturating the reaction product with ethyl acetate, ether and methanol, there was prepared 5,6-dimethyl-2-(1,4,5,6-tetrahydro-  
 5 cyclopentapyrazol-3-yl)-1H-benzimidazole (50mg) as an off-white solid. MS: 253 (M+H)<sup>+</sup>. HPLC (METHOD B1): R<sub>T</sub> = 11.17 minutes.

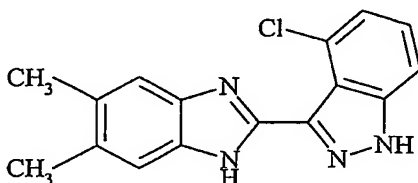
**EXAMPLE 242**

(a) 3-(5,6-Dimethyl-1H-benzimidazol-2-yl)-4-fluoro-1H-indazole



A mixture of 4,5-dimethylbenzene-1,2-diamine (70mg) and 4-fluoro-1H-indazole-3-carbaldehyde [80mg, Reference Example 20(b)] in dimethylformamide (8ml) was heated to 120°C for 30 minutes and then at 100°C for 16 hours. The reaction mixture was cooled, then diluted with ethyl acetate and then washed five times with brine. The organic phase was dried over magnesium sulfate and then  
 15 evaporated. The residue was subjected to flash column chromatography on silica eluting with a mixture of 40/60 petrol and ethyl acetate (1:5, v/v) to give 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-4-fluoro-1H-indazole (104mg) as a light brown solid. MS: 281 (M+H)<sup>+</sup>. HPLC (METHOD B1): R<sub>T</sub> = 10.08 minutes.

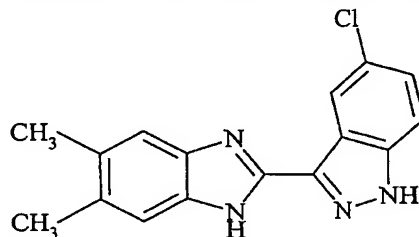
(b) 4-Chloro-3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-indazole



By proceeding in a manner similar to Example 242(a) above but using 4-chloro-3-formyl-indazole-1-carboxylic acid *tert*-butyl ester [Reference Example 20(c)] there was prepared 4-chloro-3-(5,6-

dimethyl-1H-benzoimidazol-2-yl)-1H-indazole (25mg) as an off-white solid. MS: 299 (M+H)<sup>+</sup>.  
HPLC (METHOD B1): R<sub>T</sub> = 10.59 minutes.

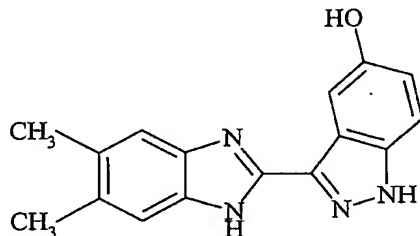
(c) 3-(5,6-Dimethyl-1H-benzoimidazol-2-yl)-5-chloro-1H-indazole



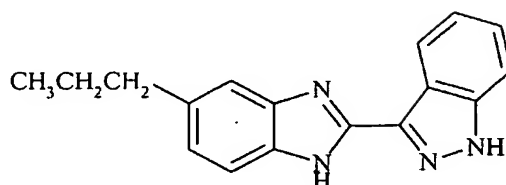
By proceeding in a manner similar to Example 242(a) above but using 5-chloro-1H-indazole-3-carbaldehyde [Reference Example 6(h)] there was prepared 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-5-chloro-1H-indazole (25mg) as a pale brown solid. LC-MS (METHOD D): R<sub>T</sub> = 24.24 minutes, 299 (M+H)<sup>+</sup>.

EXAMPLE 243

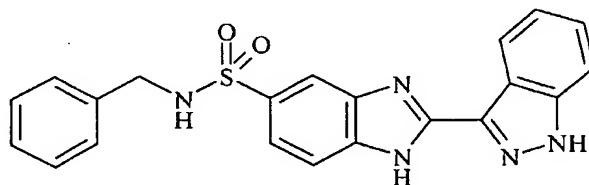
3-(5,6-Dimethyl-1H-benzoimidazol-2-yl)-1H-indazol-5-ol



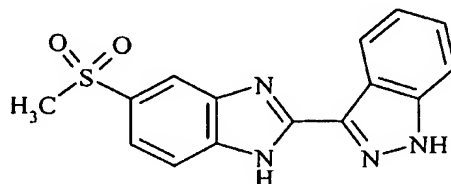
A solution of 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-5-methoxy-1H-indazole [34mg, Example 235(b)] at 0°C was treated with a solution of boron tribromide in dichloromethane (0.30mL, 1M). The mixture was then heated at reflux temperature for 4 hours, then cooled and then treated dropwise with water. The pH was adjusted to between 7 and 8 by the addition of saturated aqueous sodium bicarbonate solution and this mixture was then extracted twice with ethyl acetate. The combined extracts were washed with brine, then dried over magnesium sulfate and then evaporated. The pale yellow solid residue was subjected to flash column chromatography on silica eluting with a mixture of ethyl acetate and triethylamine (99:1, v/v) to yield 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-indazol-5-ol (23mg) as a white solid. LC-MS (METHOD B): R<sub>T</sub> = 2.19 minutes; 279 (M+H)<sup>+</sup>.

EXAMPLE 244(a) 3-(5-n-Propyl-1H-benzoimidazol-2-yl)-1H-indazole

A stirred solution of 4-propyl-benzene-1,2-diamine [57mg, Reference Example 30(d)] and sodium bisulfite (40 mg) in dimethylformamide (2 ml) was treated with indazole-3-carboxaldehyde [Reference Example 6(l)]. The reaction mixture was heated in a Smith Creator microwave at 200°C for 13 minutes then partitioned between ethyl acetate and water. The organic layer was washed with brine, then dried over magnesium sulfate and then evaporated. The residue was subjected to flash column chromatography on silica eluting with a mixture of ethyl acetate and hexane (3:1) to give 3-(5-n-propyl-1H-benzoimidazol-2-yl)-1H-indazole (74 mg) as a pale brown solid. MS: 277.3 (M+H)<sup>+</sup>. HPLC (METHOD B1): R<sub>T</sub> = 12.81 minutes.

(b) 2-(1H-Indazol-3-yl)-1H-benzoimidazole-5-sulfonic acid benzylamide

By proceeding in a manner similar to Example 244(a) above but using 3,4-diamino-N-benzyl-benzenesulfonamide [Reference Example 30(x)] and heating at 230°C there was prepared 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-sulfonic acid benzylamide (235mg) as a white solid. LC-MS (METHOD L): R<sub>T</sub> = 6.35 minutes, 404.20 (M+H)<sup>+</sup>.

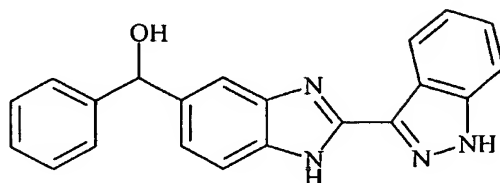
(c) 3-(5-Methanesulfonyl-1H-benzoimidazol-2-yl)-1H-indazole

By proceeding in a manner similar to Example 244(a) above but using 4-methanesulfonyl-benzene-1,2-diamine [Reference Example 49(f)] and heating at 210°C there was prepared 3-(5-methanesulfonyl-1H-

benzoimidazol-2-yl)-1H-indazole (105mg) as a white solid. LC-MS (METHOD L):  $R_T = 5.71$  minutes, 313.23 (M+H)<sup>+</sup>.

#### EXAMPLE 245

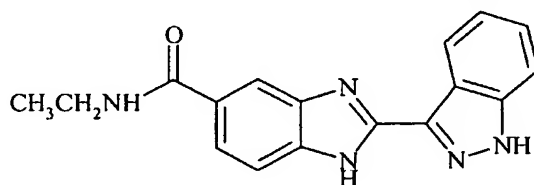
5 [2-(indazol-3-yl)-1H-benzoimidazol-5-yl]-phenyl-methanol



A stirred solution of [2-(indazol-3-yl)-1H-benzoimidazol-5-yl]-phenyl-methanone [200mg, Example 234(c)] in tetrahydrofuran (10mL), at -78°C and under an atmosphere of nitrogen, was treated dropwise with a solution of diisobutylaluminium hydride in tetrahydrofuran (1.18mL, 1N). The reaction mixture was warmed to ambient temperature, then stirred for 16 hours and then partitioned between ether and sodium hydroxide solution (2N). The organic phase was washed with water, then with brine, then dried over magnesium sulfate and then evaporated. The residue was subjected to flash column chromatography on silica eluting with a mixture of ethyl acetate and hexane (3:1, v/v) to give [2-(indazol-3-yl)-1H-benzoimidazol-5-yl]-phenyl-methanol (161mg) as a white solid. LC-MS (Method D):  $R_T = 21.89$  minutes, 341.3 (M+H)<sup>+</sup>.

#### EXAMPLE 246

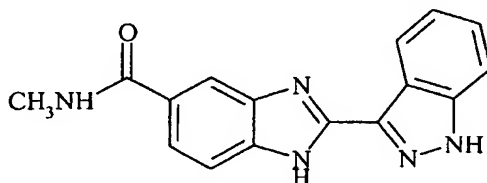
(a) [2-(Indazol-3-yl)-1H-benzoimidazol-5-yl]-carboxylic acid, ethylamide



A stirred solution of [2-(indazol-3-yl)-1H-benzoimidazol-5-yl]-carboxylic acid [130mg, Example 247(a)], hydroxybenzotriazole (189mg) and diisopropyl ethylamine (732μL) in dimethylformamide (3mL) was treated with ethylamine and 1-(3-dimethylaminopropyl)-3-ethylcarbodiimide hydrochloride (267mg). The reaction mixture was heated at 80°C overnight and then partitioned between ethyl acetate and 5% citric acid. The aqueous layer was re-extracted with ethyl acetate. The combined organic layers were washed with saturated aqueous sodium hydrogen carbonate solution, then with brine, then dried over magnesium sulfate and then evaporated. The residual oil was subjected to

preparative HPLC to give [2-(indazol-3-yl)-1H-benzoimidazol-5-yl]-carboxylic acid, ethylamide as a white solid. LC-MS (METHOD B):  $R_T = 2.37$  minutes; 306.27 (M+H)<sup>+</sup>.

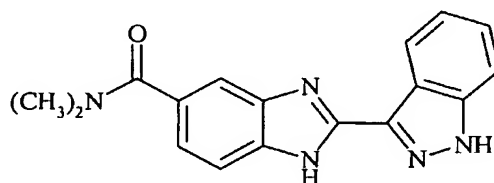
(b) [2-(Indazol-3-yl)-1H-benzoimidazol-5-yl]-carboxylic acid, methylamide



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By proceeding in a manner similar to Example 246(a) above but using methylamine, there was prepared [2-(indazol-3-yl)-1H-benzoimidazol-5-yl]-carboxylic acid, methylamide as a white solid. LC-MS (METHOD B):  $R_T = 2.28$  minutes; 292.30 (M+H)<sup>+</sup>.

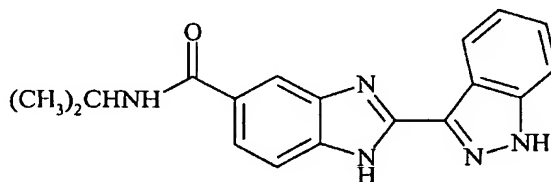
10 (c) [2-(Indazol-3-yl)-1H-benzoimidazol-5-yl]-carboxylic acid, dimethylamide



By proceeding in a manner similar to Example 246(a) above but using dimethylamine, there was prepared [2-(indazol-3-yl)-1H-benzoimidazol-5-yl]-carboxylic acid, dimethylamide as a white solid. LC-MS (METHOD B):  $R_T = 2.38$  minutes; 306.27 (M+H)<sup>+</sup>.

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(d) [2-(Indazol-3-yl)-1H-benzoimidazol-5-yl]-carboxylic acid, isopropylamide



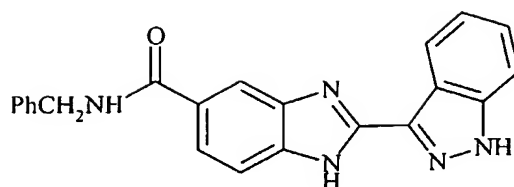
By proceeding in a manner similar to Example 246(a) above but using isopropylamine, there was prepared [2-(indazol-3-yl)-1H-benzoimidazol-5-yl]-carboxylic acid, isopropylamide as a white solid.

20 LC-MS (METHOD B):  $R_T = 2.48$  minutes; 320.30 (M+H)<sup>+</sup>.

(e) [2-(Indazol-3-yl)-1H-benzoimidazol-5-yl]-carboxylic acid, benzylamide



-409-

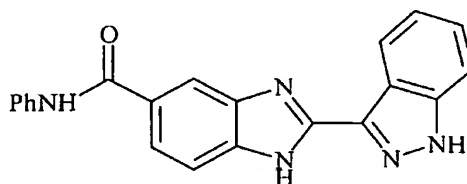


By proceeding in a manner similar to Example 246(a) above but using benzylamine, there was prepared [2-(indazol-3-yl)-1H-benzoimidazol-5-yl]-carboxylic acid, benzylamide as a white solid.

LC-MS (METHOD B):  $R_T = 2.68$  minutes;  $368.27 (M+H)^+$ .

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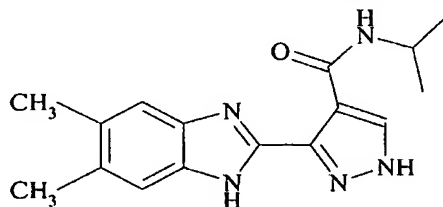
(f) [2-(indazol-3-yl)-1H-benzoimidazol-5-yl]-carboxylic acid, benzamide



By proceeding in a manner similar to Example 246 (a) above but using aniline, there was prepared [2-(indazol-3-yl)-1H-benzoimidazol-5-yl]-carboxylic acid, benzamide as a white solid.

10 LC-MS (METHOD B):  $R_T = 2.73$  minutes;  $354.26 (M+H)^+$ .

(g) 3-(5,6-Dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isopropylamide

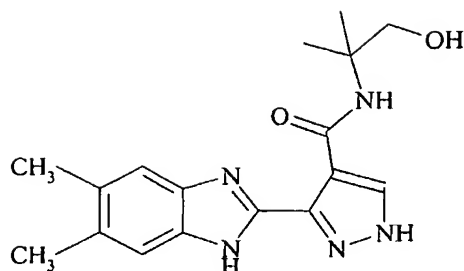


By proceeding in a manner similar to Example 246(a) above but using 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-pyrazole-4-carboxylic acid [Example 247(b)] and isopropylamine, and subjecting the reaction product to flash chromatography on silica eluting with a mixture of dichloromethane and methanol (19:1, v/v), there was prepared 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isopropylamide as an off-white solid. LC-MS (METHOD B):  $R_T = 2.67$  minutes;  $298 (M+H)^+$ .

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(h) 3-(5,6-Dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid (2-hydroxy-1,1-dimethyl-ethyl)-amide

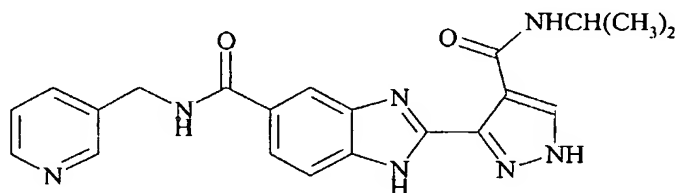
-410-



By proceeding in a manner similar to Example 246(a) above but using 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-pyrazole-4-carboxylic acid [Example 247(b)] and 2-amino-2-methyl-1-propanol, and subjecting the reaction product to flash chromatography on silica eluting with a mixture of dichloromethane and methanol (19:1, v/v), there was prepared 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid (2-hydroxy-1,1-dimethyl-ethyl)-amide as a pale yellow solid.

LC-MS (METHOD B):  $R_T = 2.63$  minutes; 328 (M+H)<sup>+</sup>.

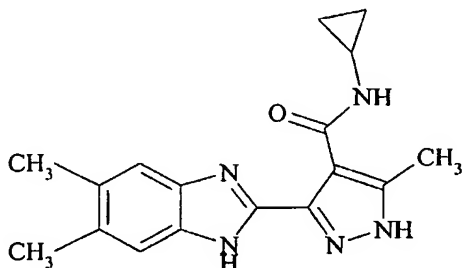
(i) 2-(4-Isopropylcarbamoyl-1H-pyrazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (pyridin-3-ylmethyl)-amide



By proceeding in a manner similar to Example 246(a) above but using 2-(4-isopropylcarbamoyl-1H-pyrazol-3-yl)-1H-benzoimidazole-5-carboxylic acid [Example 247(c)] and 3-(aminomethyl)pyridine there was prepared 2-(4-isopropylcarbamoyl-1H-pyrazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (pyridin-3-ylmethyl)-amide as a white solid.

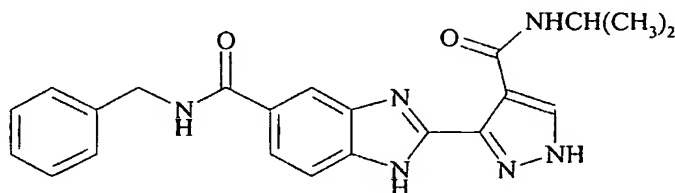
LC-MS (METHOD B):  $R_T = 2.49$  minutes; 404 (M+H)<sup>+</sup>.

(j) 3-(5,6-Dimethyl-1H-benzoimidazol-2-yl)-5-methyl-1H-pyrazole-4-carboxylic acid cyclopropylamide



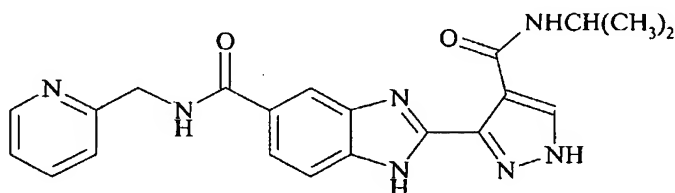
By proceeding in a manner similar to Example 246(a) above but using 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-5-methyl-pyrazole-4-carboxylic acid [Example 247(d)] and cyclopropylamine, and subjecting the reaction product to flash chromatography on silica eluting with a mixture of dichloromethane and methanol (19:1, v/v), there was prepared 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-5-methyl-1H-pyrazole-4-carboxylic acid cyclopropylamide as a white solid. LC-MS (METHOD B):  $R_T = 2.67$  minutes; 310 (M+H)<sup>+</sup>.

(k) 2-(4-isopropylcarbamoyl-1H-pyrazol-3-yl)-1H-benzimidazole-5-carboxylic acid phenylmethyl-amide



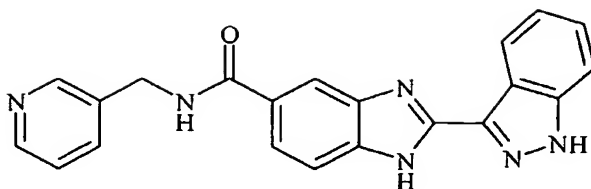
By proceeding in a manner similar to Example 246(a) above but using 2-(4-isopropylcarbamoyl-1H-pyrazol-3-yl)-1H-benzimidazole-5-carboxylic acid [Example 247(c)] and benzylamine there was prepared 2-(4-isopropylcarbamoyl-1H-pyrazol-3-yl)-1H-benzimidazole-5-carboxylic acid phenylmethyl-amide as a pale yellow solid. LC-MS (METHOD B):  $R_T = 3.17$  minutes; 403 (M+H)<sup>+</sup>.

(l) 2-(4-isopropylcarbamoyl-1H-pyrazol-3-yl)-1H-benzimidazole-5-carboxylic acid (pyridin-2-ylmethyl)-amide



By proceeding in a manner similar to Example 246(a) above but using 2-(4-isopropylcarbamoyl-1H-pyrazol-3-yl)-1H-benzimidazole-5-carboxylic acid [Example 247(c)] and 2-(aminomethyl)pyridine there was prepared 2-(4-isopropylcarbamoyl-1H-pyrazol-3-yl)-1H-benzimidazole-5-carboxylic acid (pyridin-2-ylmethyl)-amide as an off-white solid. LC-MS (Method D):  $R_T = 9.33$  minutes, 367.28 (M+H)<sup>+</sup>.

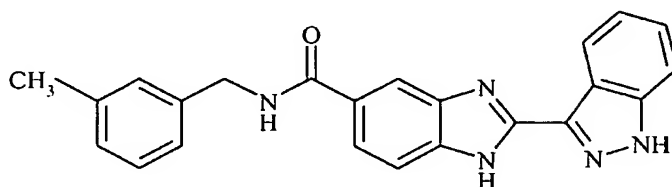
(m) 2-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid (pyridin-3-ylmethyl)-amide



By proceeding in a manner similar to Example 246(a) above but using 3-(aminomethyl)pyridine there was prepared 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (pyridin-3-ylmethyl)-amide (42.2mg) as an off white solid. LC-MS (Method L):  $R_T = 4.96$  minutes, 367.19 (M-H)<sup>-</sup>.

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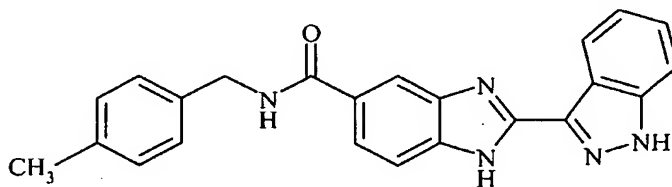
(n) 2-(1H-Indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 3-methyl-benzylamide



By proceeding in a manner similar to Example 246(a) above but using 3-methylbenzylamine there was prepared 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 3-methyl-benzylamide (33.4mg) as

10 a white solid. MS: 382.52 (M+H)<sup>+</sup>. HPLC (Method B1):  $R_T = 16.22$  minutes.

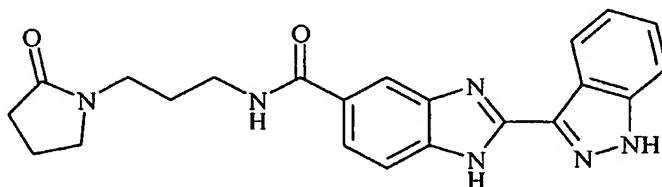
(o) 2-(1H-Indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-methyl-benzylamide



By proceeding in a manner similar to Example 246(a) above but using 4-methylbenzylamine there was prepared 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-methyl-benzylamide (63.5mg) as

15 a white solid. MS: 382.54 (M+H)<sup>+</sup>. HPLC (Method B1):  $R_T = 16.14$  minutes.

(p) 2-(1H-Indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid [3-(2-oxo-pyrrolidin-1-yl)-propyl]-amide

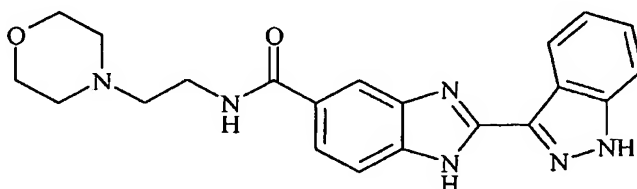


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By proceeding in a manner similar to Example 246(a) above but using 1-(3-aminopropyl)-2-pyrrolidinone there was prepared 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid [3-(2-oxo-pyrrolidin-1-yl)-propyl]-amide (68.1mg) as a white solid. MS: 401.13 (M-H)<sup>-</sup>. HPLC (Method B1): R<sub>T</sub> = 11.29 minutes.

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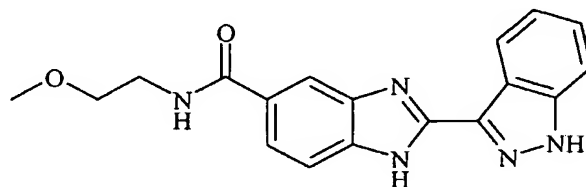
(q) 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2-morpholin-4-yl-ethyl)-amide



By proceeding in a manner similar to Example 246(a) above but using 4-(2-aminoethyl)morpholine there was prepared 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2-morpholin-4-yl-ethyl)-amide (70.8mg) as a white solid. MS: 389.12 (M-H)<sup>-</sup>. HPLC (Method B1): R<sub>T</sub> = 8.51 minutes.

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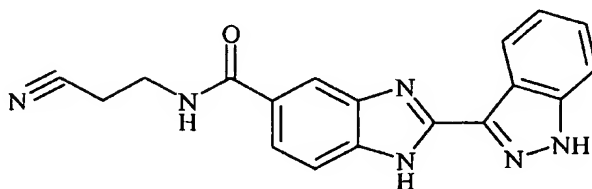
(r) 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2-methoxy-ethyl)-amide



By proceeding in a manner similar to Example 246(a) above but using 2-methoxyethylamine there was prepared 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2-methoxy-ethyl)-amide (55.2mg) as a white solid. MS: 336.52 (M+H)<sup>+</sup>. HPLC (Method B1): R<sub>T</sub> = 11.30 minutes.

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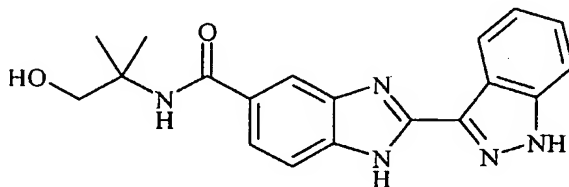
(s) 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2-cyano-ethyl)-amide



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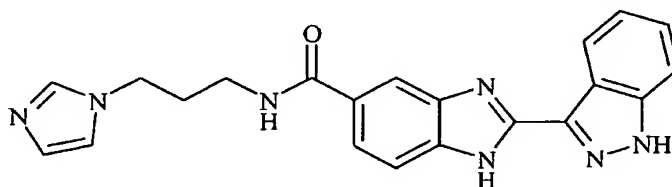
By proceeding in a manner similar to Example 246(a) above but heating the reaction at 50°C and using 3-aminopropionitrile there was prepared 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2-cyano-ethyl)-amide (15.4mg) as a white solid. MS: 331.15 (M+H)<sup>+</sup>, 329.17 (M-H)<sup>-</sup>. HPLC (Method B1): R<sub>T</sub> = 12.72 minutes.

- (t) 2-(1H-Indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2-hydroxy-1,1-dimethyl-ethyl)-amide



- 5 By proceeding in a manner similar to Example 246(a) above but heating the reaction at 50°C and using 2-amino-2-methyl-1-propanol there was prepared 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2-hydroxy-1,1-dimethyl-ethyl)-amide (29.6mg) as a brown oil. LC-MS (Method L):  $R_T = 10.57$  minutes, 350.16 (M+H)<sup>+</sup>, 348.18 (M-H)<sup>-</sup>.

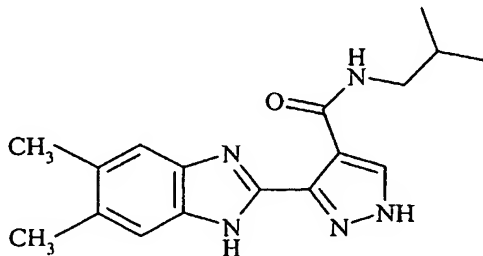
- 10 (u) 2-(1H-Indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (3-imidazol-1-yl-propyl)-amide



By proceeding in a manner similar to Example 246(a) above but using 1-(3-aminopropyl)imidazole there was prepared 2-(1H-Indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (3-imidazol-1-yl-propyl)-amide (31.9mg) as a white solid. LC-MS (Method B):  $R_T = 8.45$  minutes, 386.22 (M+H)<sup>+</sup>, 384.26

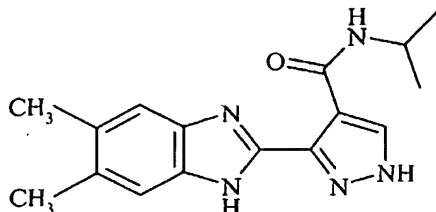
15 (M-H)<sup>-</sup>.

- (v) 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isobutyl-amide



By proceeding in a manner similar to Example 246(g) above but using isobutylamine there was prepared 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isobutyl-amide (101mg) as a white solid. LC-MS (METHOD M):  $R_T = 9.38$  minutes, 312 (M+H)<sup>+</sup>.

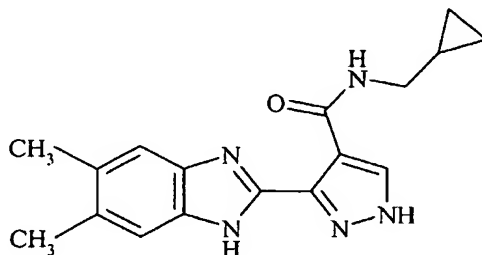
- 5 (w) 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isopropylamide



By proceeding in a manner similar to Example 246(g) above but using isopropylamine there was prepared 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isopropylamide (100mg) as a white solid. LC-MS (METHOD L):  $R_T = 7.21$  minutes, 298 (M+H)<sup>+</sup>.

10

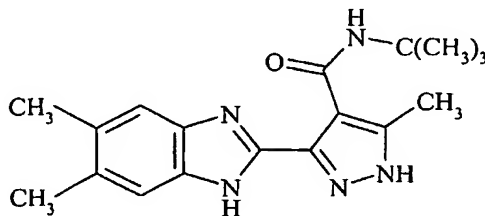
- (x) 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid cyclopropylmethyl-amide



By proceeding in a manner similar to Example 246(g) above but using (aminomethyl)cyclopropane

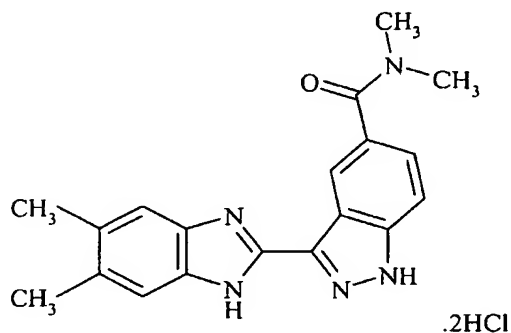
- 15 there was prepared 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid cyclopropylmethyl-amide (105mg) as a white solid. LC-MS (METHOD M):  $R_T = 8.77$  minutes, 310 (M+H)<sup>+</sup>.

- 20 (y) 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-5-methyl-1H-pyrazole-4-carboxylic acid tert-butylamide



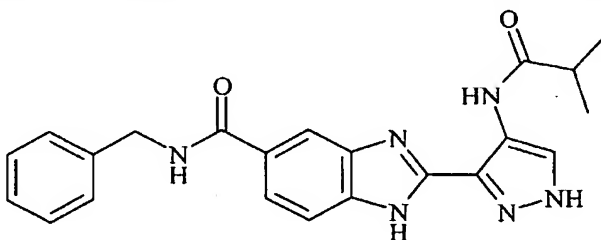
By proceeding in a manner similar to Example 246(j) above but using *tert*-butylamine there was prepared 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-5-methyl-1H-pyrazole-4-carboxylic acid *tert*-butylamide (57mg) as an off-white solid. LC-MS (METHOD M):  $R_T = 13.86$  minutes, 326 (M+H)<sup>+</sup>.

- 5 (z) 3-(5,6-Dimethyl-1H-benzimidazol-2-yl)-1H-indazole-5-carboxylic acid dimethylamide dihydrochloride



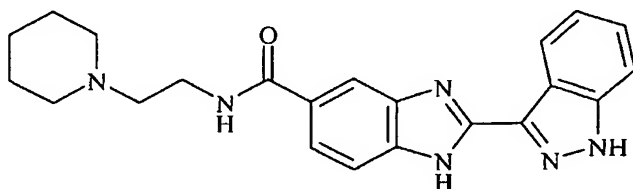
- By proceeding in a manner similar to Example 246(j) above, but (i) using 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-indazole-5-carboxylic acid [97mg, Example 263] and dimethylamine hydrochloride (23mg), (ii) carrying out the reaction at ambient temperature overnight, and (iii) subjecting the reaction product to flash column chromatography [eluting with ethyl acetate to ethyl acetate/methanol (97:3, v/v)] followed by treatment with 4M hydrogen chloride in 1,4-dioxane and trituration with dichloromethane and diethyl ether there was prepared 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-indazole-5-carboxylic acid dimethylamide dihydrochloride (8mg) as a white solid. LC-MS (METHOD M):  $R_T = 9.37$  minutes, 320 (M+H)<sup>+</sup>.
- 10
- 15

- (aa) 2-(4-Isobutyrylamino-1H-pyrazol-3-yl)-1H-benzimidazole-5-carboxylic acid benzylamide



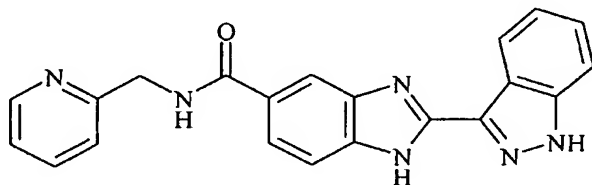
- By proceeding in a manner similar to Example 246(a) above but using 2-(4-isobutyrylamino-1H-pyrazol-3-yl)-1H-benzimidazole-5-carboxylic acid [Reference Example 35] and benzylamine there was prepared 2-(4-Isobutyrylamino-1H-pyrazol-3-yl)-1H-benzimidazole-5-carboxylic acid benzylamide (17mg) as a white solid. LC-MS (METHOD L):  $R_T = 11.00$  minutes, 403 (M+H)<sup>+</sup>.
- 20



(ab) 2-(1H-Indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2-piperidin-1-yl-ethyl)-amide

By proceeding in a manner similar to Example 246(a) above but using 1-(2-aminoethyl)piperidine, and

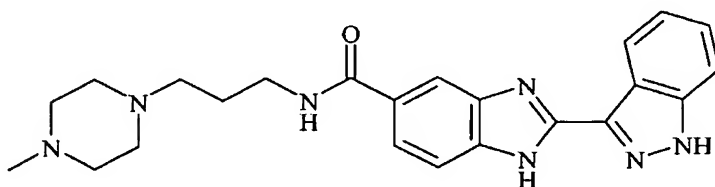
- 5 heating the reaction mixture at 50°C for 6 hours, there was prepared 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2-piperidin-1-yl-ethyl)-amide as an oil. MS: 387.22 (M-H)<sup>-</sup>. HPLC (Method L): R<sub>T</sub> = 5.03 minutes.

(ac) 2-(1H-Indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (pyridin-2-ylmethyl)-amide

10

By proceeding in a manner similar to Example 246(ab) above but using (2-aminomethyl)pyridine there was prepared 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (pyridin-2-ylmethyl)-amide as an off-white solid. MS: 367.28 (M+H)<sup>+</sup>. HPLC (Method B1): R<sub>T</sub> = 9.33 minutes.

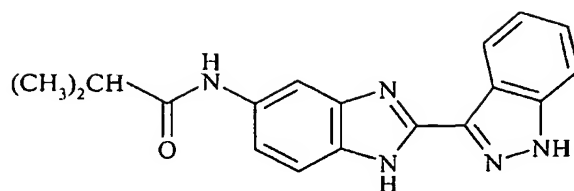
- 15 (ad) 2-(1H-Indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid [3-(4-methyl-piperazin-1-yl)-propyl]-amide



By proceeding in a manner similar to Example 246(ab) above but using 4-(3-(aminopropyl))-1-methyl piperazine there was prepared 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid [3-(4-methyl-

- 20 piperazin-1-yl)-propyl]-amide as an oil. MS: 416.21 (M+H)<sup>+</sup>. HPLC (Method L): R<sub>T</sub> = 4.46 minutes.

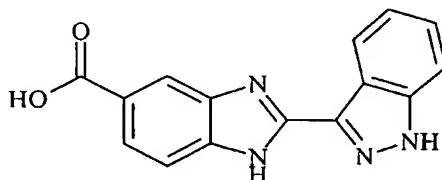
(ae) N-[2-(1H-Indazol-3-yl)-1H-benzoimidazol-5-yl]-isobutyramide



By proceeding in a manner similar to Example 246(ab) above but using isobutyric acid and 2-(1H-indazol-3-yl)-3H-benzoimidazol-5-amine [Example 265] there was prepared N-[2-(1H-Indazol-3-yl)-1H-benzoimidazol-5-yl]-isobutyramide as an off-white solid. MS: 320.23 (M+H)<sup>+</sup>. HPLC (Method B1): R<sub>T</sub> = 19.28 minutes.

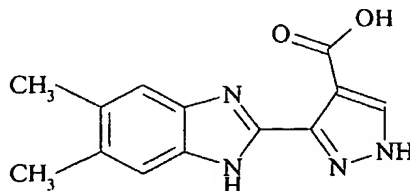
#### EXAMPLE 247

##### (a) [2-(Indazol-3-yl)-1H-benzoimidazol-5-yl]-carboxylic acid

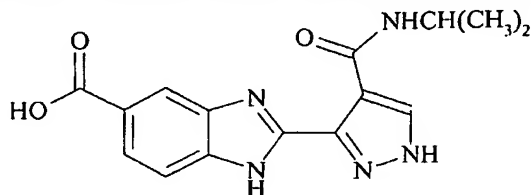


A stirred solution of 3-(5-methoxycarbonyl-1H-benzoimidazol-2-yl)-1H-indazole [84.5mg, Example 235(ac)] and sodium hydroxide (74mg) in tetrahydrofuran (4mL) and water (2mL) was heated at 75°C overnight. The reaction mixture was evaporated and the oily residue was partitioned between ethyl acetate and water. The aqueous layer was acidified to pH 6 and extracted with ethyl acetate. The organic layers was dried over magnesium sulfate and then evaporated to give [2-(indazol-3-yl)-1H-benzoimidazol-5-yl]-carboxylic acid (80mg) as an oil. MS: 279.14 (M+H)<sup>+</sup>. HPLC (METHOD H): R<sub>T</sub> = 2.81 minutes.

##### (b) 3-(5,6-Dimethyl-1H-benzoimidazol-5-yl)-pyrazole-4-carboxylic acid

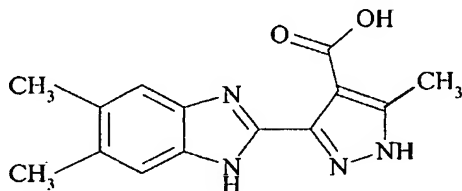


By proceeding in a manner similar to Example 247(a) above but using 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-pyrazole-4-carboxylic acid ethyl ester [Example 235(ae)] and carrying out the reaction at 60°C there was prepared 3-(5,6-dimethyl-1H-benzoimidazol-5-yl)-pyrazole-4-carboxylic acid as a white solid. LC-MS (METHOD B): R<sub>T</sub> = 2.17 minutes; 257 (M+H)<sup>+</sup>.

(c) 2-(4-Isopropylcarbamoyl-1H-pyrazol-3-yl)-1H-benzimidazole-5-carboxylic acid

By proceeding in a manner similar to Example 247(a) above but using 2-(4-isopropylcarbamoyl-1H-pyrazol-3-yl)-1H-benzimidazole-5-carboxylic acid methyl ester [Example 235(af)], replacing the

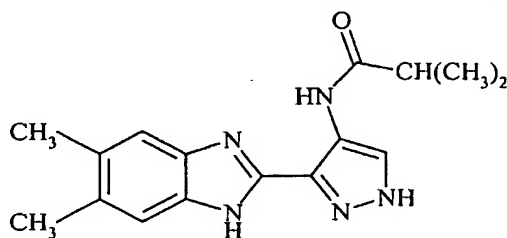
- 5 tetrahydrofuran with methanol and carrying out the reaction at 65°C, there was prepared 2-(4-isopropylcarbamoyl-1H-pyrazol-3-yl)-1H-benzimidazole-5-carboxylic acid as a pale brown solid which was used without further purification. LC-MS (METHOD B):  $R_T = 2.67$  minutes; 314 (M+H)<sup>+</sup>.

(d) 3-(5,6-Dimethyl-1H-benzimidazol-2-yl)-5-methyl-pyrazole-4-carboxylic acid

10

By proceeding in a manner similar to Example 247(a) above but using 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-5-methyl-pyrazole-4-carboxylic acid ethyl ester [Example 235(ag)], replacing the tetrahydrofuran with methanol and carrying out the reaction at 65°C, there was prepared 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-5-methyl-pyrazole-4-carboxylic acid as a white solid. LC-MS

- 15 (METHOD B):  $R_T = 2.75$  minutes; 271 (M+H)<sup>+</sup>.

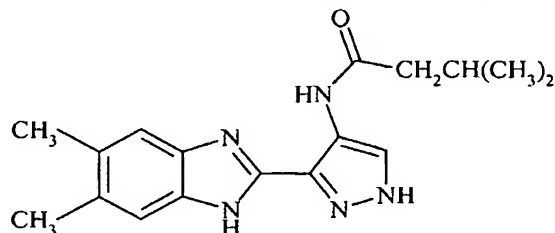
EXAMPLE 248(a) N-[3-(5,6-Dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-isobutyramide

- 20 A stirred solution of 5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-ylamine [83mg, Example 233(c)] and diisopropylethylamine (256μL) in dichloromethane (4mL) was treated with isobutyryl chloride (115μL). The reaction mixture was stirred for 30 minutes at room temperature then treated with piperidine (500μL) and stirring was continued for a further hour. The reaction mixture was

partitioned between 5% citric acid. The organic layer was dried over magnesium sulfate and then evaporated. The residue was subjected to flash chromatography on silica eluting with a mixture of hexane and ethyl acetate to give N-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-isobutyramide (49mg) as a white solid. MS: 298.28 (M+H)<sup>+</sup>. HPLC (METHOD B1): R<sub>T</sub> = 14.66

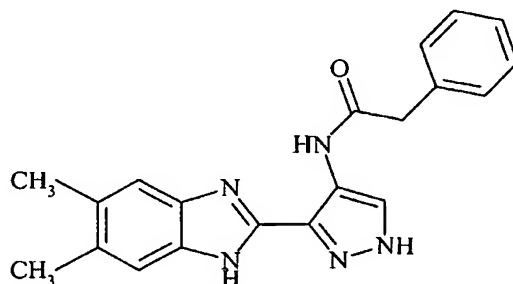
5 minutes.

(b) N-[3-(5,6-Dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-methyl-butyramide



10 By proceeding in a manner similar to Example 248(a) above but using isovaleryl chloride there was prepared N-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-methyl-butyramide as a white solid. MS: 312.28 (M+H)<sup>+</sup>. HPLC (METHOD B1): R<sub>T</sub> = 15.28 minutes.

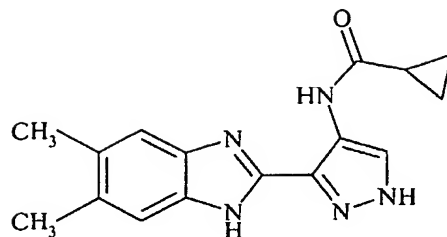
(c) N-[3-(5,6-Dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-2-phenyl-acetamide



15 By proceeding in a manner similar to Example 248(a) above but using phenylacetyl chloride there was prepared N-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-2-phenyl-acetamide as a white solid. LC-MS (METHOD B): R<sub>T</sub> = 2.83 minutes, 346.18 (M+H)<sup>+</sup>.

(d) Cyclopropanecarboxylic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide

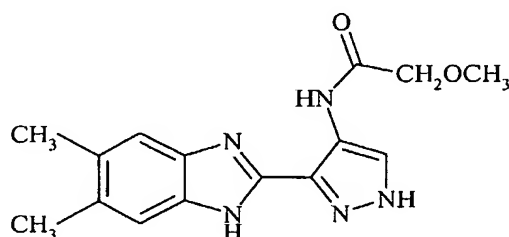
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By proceeding in a manner similar to Example 248(a) above but using cyclopropanecarbonyl chloride, there was prepared cyclopropanecarboxylic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide as a white solid. MS: 296.28 (M+H)<sup>+</sup>. HPLC (METHOD B1): R<sub>T</sub> = 13.50 minutes.

5

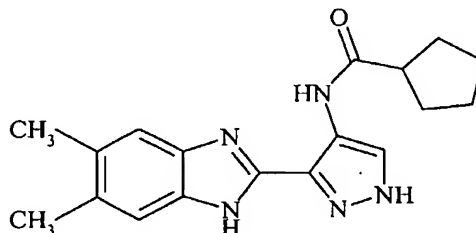
(e) Methoxyacetic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide



By proceeding in a manner similar to Example 248(a) above but using methoxyacetyl chloride, there was prepared methoxyacetic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide as a white solid. MS: 300.33 (M+H)<sup>+</sup>. HPLC (METHOD C1): R<sub>T</sub> = 14.25 minutes.

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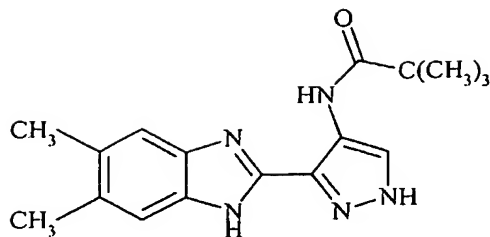
(f) Cyclopentanecarboxylic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide



By proceeding in a manner similar to Example 248(a) above but using cyclopentylcarbonyl chloride, there was prepared cyclopentanecarboxylic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide as a white solid. MS: 324.39 (M+H)<sup>+</sup>. HPLC (METHOD B1): R<sub>T</sub> = 17.64 minutes.

15

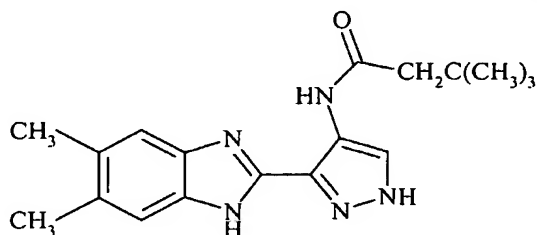
(g) Trimethylacetic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide



By proceeding in a manner similar to Example 248(a) above but using trimethylacetyl chloride, there was prepared trimethylacetic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide as a white solid. MS: 312.39 (M+H)<sup>+</sup>. HPLC (METHOD B1): R<sub>T</sub> = 19.52 minutes.

5

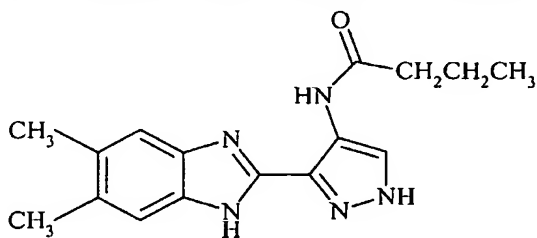
(h) tert-Butylacetic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide



By proceeding in a manner similar to Example 248(a) above but using *tert*-butylacetyl chloride, there was prepared tert-butylacetic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide as a white solid. MS: 326.29 (M+H)<sup>+</sup>. HPLC (METHOD B1): R<sub>T</sub> = 19.52 minutes.

10

(i) Butanoic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide

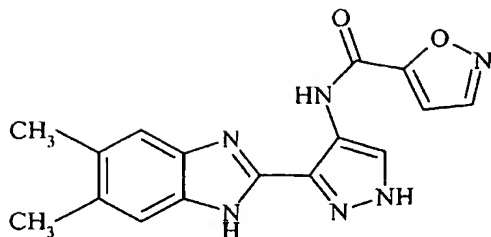


By proceeding in a manner similar to Example 248(a) above but using butyryl chloride, there was prepared butanoic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide as a white solid. MS: 298.34 (M+H)<sup>+</sup>. HPLC (METHOD B1): R<sub>T</sub> = 15.07 minutes.

15

(j) Isoxazole-5-carboxylic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide

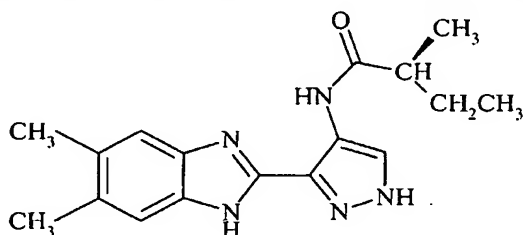
-423-



By proceeding in a manner similar to Example 248(a) above but using isoxazole-5-carbonyl chloride, there was prepared isoxazole-5-carboxylic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide as a white solid. MS: 323.16 (M+H)<sup>+</sup>. HPLC (METHOD B1): R<sub>T</sub> = 10.01 minutes.

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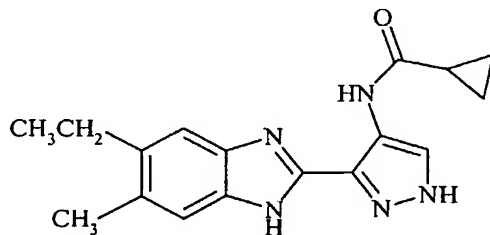
(k) S(+)-2-Methylbutanoic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide



By proceeding in a manner similar to Example 248(a) above but using S(+)-2-methyl butyryl chloride, there was prepared S(+)-2-methylbutanoic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide as a white solid. MS: 312.18 (M+H)<sup>+</sup>. HPLC (METHOD B1): R<sub>T</sub> = 11.15 minutes.

10

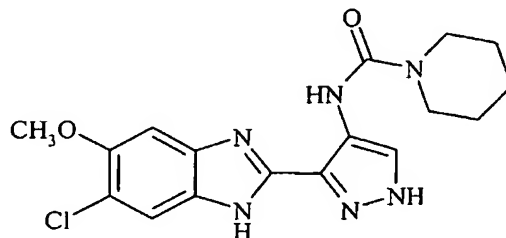
(l) Cyclopropanecarboxylic acid [3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide



15 By proceeding in a manner similar to Example 248(a) above but using 3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-ylamine [Example 233(d)] and cyclopropanecarbonyl chloride, there was prepared cyclopropanecarboxylic acid [3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide as a white solid. MS: 310.32 (M+H)<sup>+</sup>. HPLC (METHOD B1): R<sub>T</sub> = 8.88 minutes.

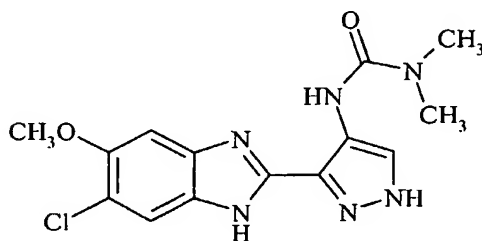
20

- (m) Piperidine-1-carboxylic acid[3-(6-chloro-5-methoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide



- By proceeding in a manner similar to Example 248(a) above but (i) treating a solution of 3-(6-chloro-5-methoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-ylamine [0.2g, Example 233(e)] and diisopropylethylamine (392mg, 4 eq) in tetrahydrofuran (25mL) with piperidinecarbonyl chloride (450mg, 4 eq), stirring overnight at ambient temperature, and evaporating the reaction mixture, (ii) triturating the reaction product with water (30 mL) and ethyl acetate (50 mL) and extracting with aqueous layer with ethyl acetate, (iii) combining the organic phases, drying over magnesium sulfate, then evaporating (iv) chromatographing the residue on silica gel (ethyl acetate), (v) triturating the partially purified material with ethyl acetate (15mL) for 1.5 hours and filtering, and (vi) evaporating the filtrate and chromatographing the residue on silica gel (ethyl acetate/heptane gradient of 20-0%) there was prepared piperidine-1-carboxylic acid[3-(6-chloro-5-methoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide (50 mg) as a yellow solid, mp >310°C. LC-MS (Method E)  $R_T$  = 3.25 minutes, 374 (M+H)<sup>+</sup>.

- (n) 3-[3-(6-Chloro-5-methoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-dimethylurea

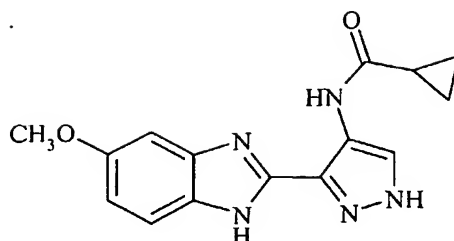


- By proceeding in a similar manner to Example 248(m) above but using N,N-dimethylcarbonyl chloride there was prepared 3-[3-(6-chloro-5-methoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-dimethylurea as a yellow solid, mp >300°C. LC-MS (Method E):  $R_T$  = 2.4 minutes, 335 (M+H)<sup>+</sup>.

- (o) Cyclopropanecarboxylic acid [3-(5-methoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide

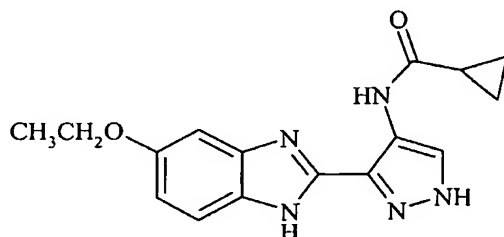


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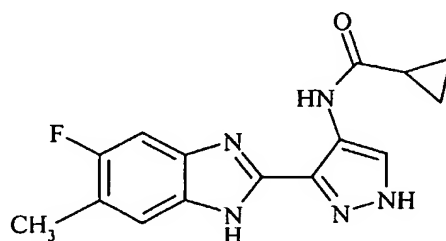
By proceeding in a manner similar to Example 248(a) above but using 3-(5-methoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-ylamine [282mg, Example 233(f)] and cyclopropanecarbonyl chloride (0.558ml) there was prepared cyclopropanecarboxylic acid [3-(5-methoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide (76mg) as an off-white solid. LC-MS (Method L):  $R_T = 5.25$  minutes, 298.26 (M+H)<sup>+</sup>.

(p) Cyclopropanecarboxylic acid [3-(5-ethoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide



10 By proceeding in a manner similar to Example 248(o) above but using 3-(5-ethoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-ylamine [187mg, Example 233(g)] there was prepared cyclopropanecarboxylic acid [3-(5-ethoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide (112mg) as a pale yellow solid. LC-MS (Method H):  $R_T = 2.26$  minutes, 312.23 (M+H)<sup>+</sup>, 310.30 (M-H)<sup>-</sup>.

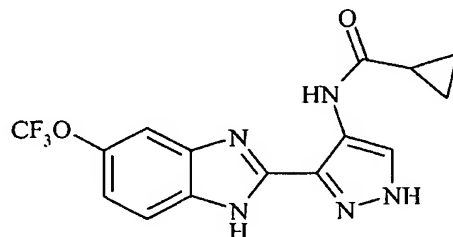
15 (q) Cyclopropanecarboxylic acid [3-(5-fluoro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide



By proceeding in a manner similar to Example 248(a) above but using 3-(5-fluoro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-ylamine [Example 233(h)] and cyclopropanecarbonyl chloride there

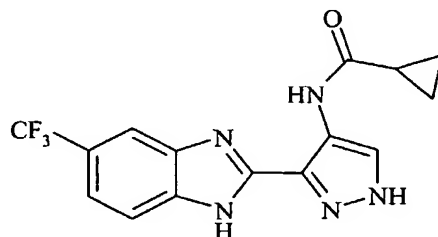
was prepared cyclopropanecarboxylic acid [3-(5-fluoro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide (135mg) as a white solid. LC-MS (METHOD M):  $R_T = 11.31$  minutes, 300.31 (M+H)<sup>+</sup>.

- (r) Cyclopropanecarboxylic acid [3-(5-trifluoromethoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide



By proceeding in a manner similar to Example 248(a) above but using 3-(5-trifluoromethoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-ylamine [Example 233(i)] and cyclopropanecarbonyl chloride there was prepared cyclopropanecarboxylic acid [3-(5-trifluoromethoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide (275mg) as a white solid. LC-MS (METHOD M):  $R_T = 13.57$  minutes, 352.22 (M+H)<sup>+</sup>.

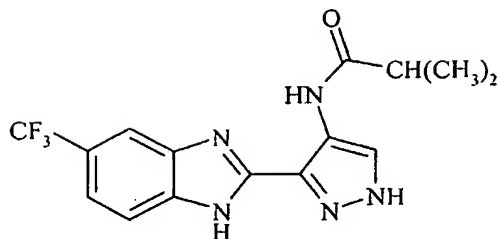
- (s) Cyclopropanecarboxylic acid [3-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide



By proceeding in a manner similar to Example 248(a) above but using 3-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-ylamine [Example 233(j)] and cyclopropanecarbonyl chloride there was prepared cyclopropanecarboxylic acid [3-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide (88mg) as a white solid. LC-MS (METHOD M):  $R_T = 13.62$  minutes, 338.12 (M+H)<sup>+</sup>.

- (t) N-[3-(5-Trifluoromethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-isobutyramide

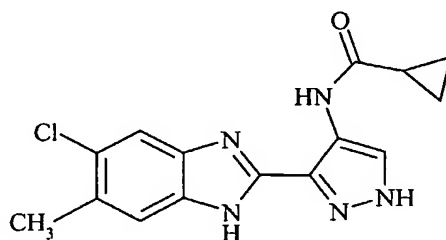
-427-



By proceeding in a manner similar to Example 248(s) above but using isobutyryl chloride there was prepared N-[3-(5-trifluoromethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-isobutyramide (71 mg) as a white solid. LC-MS (METHOD M):  $R_T = 10.11$  minutes,  $336.12 (M+H)^+$ .

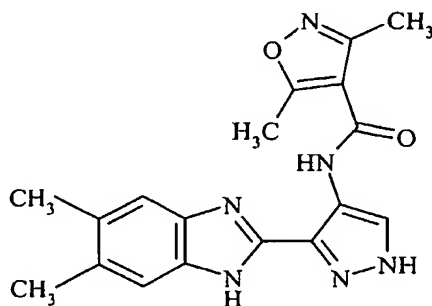
5

- (u) Cyclopropanecarboxylic acid [3-(5-chloro-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide



- By proceeding in a manner similar to Example 248(a) above but using 3-(5-chloro-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-ylamine [Example 261] and cyclopropanecarbonyl chloride there was prepared cyclopropanecarboxylic acid [3-(5-chloro-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide (46mg) as a white solid. LC-MS (METHOD L):  $R_T = 7.06$  minutes, MS:  $316.26 (M+H)^+$ .

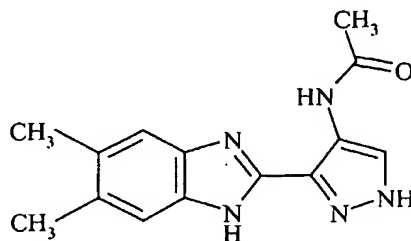
- 15 (v) 3,5-Dimethyl-isoxazole-4-carboxylic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide



By proceeding in a manner similar to Example 248(a) above but using 3,5-dimethylisoxazole-4-carbonyl chloride there was prepared 3,5-dimethyl-isoxazole-4-carboxylic acid [3-(5,6-dimethyl-1H-

benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide (62mg) as a white solid. LC-MS (METHOD L):  $R_T$  = 8.45 minutes, 351.32 (M+H)<sup>+</sup>.

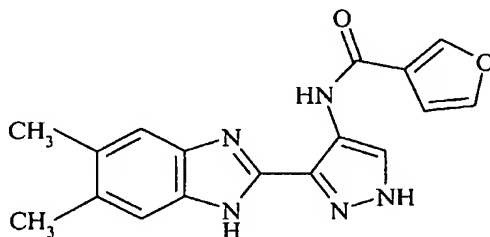
(w) N-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-acetamide



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By proceeding in a manner similar to Example 248(a) above but using acetyl chloride there was prepared N-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-acetamide (25mg) as a white solid. LC-MS (METHOD L):  $R_T$  = 6.34 minutes, 270.14 (M+H)<sup>+</sup>.

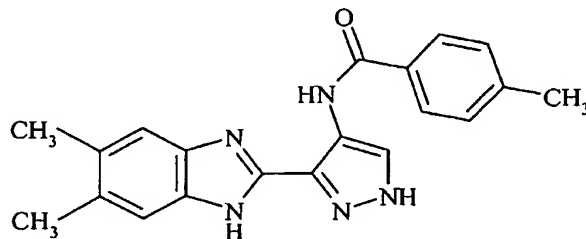
10 (x) Furan-3-carboxylic acid [3-(5,6-dimethylmethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide



By proceeding in a manner similar to Example 248 (a) above but using 3-furoylchloride there was prepared furan-3-carboxylic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide

15 (80mg) as a white solid. LC-MS (METHOD L):  $R_T$  = 7.10 minutes, 322.31 (M+H)<sup>+</sup>.

(y) N-[3-(5,6-Dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-4-methyl-benzamide

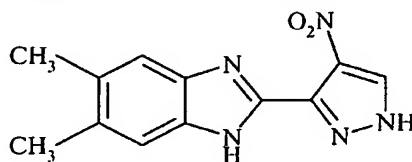


By proceeding in a manner similar to Example 248(a) above but using *p*-toluoyl chloride there was prepared N-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-4-methyl-benzamide (42mg) as a white solid. LC-MS (METHOD L):  $R_T = 12.24$  minutes, 346 (M+H)<sup>+</sup>.

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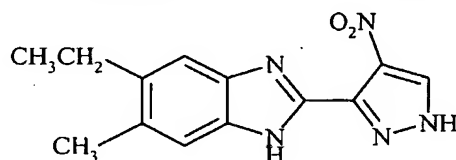
**EXAMPLE 249**

(a) 5,6-Dimethyl-2-(4-nitro-1H-pyrazol-3-yl)-1H-benzimidazole



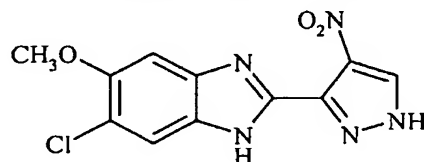
A stirred solution of 4-nitro-1H-pyrazole-3-carboxylic acid (2-amino-4,5-dimethylphenyl)amide [5.7g, Reference Example 36(a)] in acetic acid (100mL) was heated at 120°C for 1 hour, then cooled to ambient temperature and then evaporated. The oily residue was partitioned between ethyl acetate and water. The organic layer was dried over magnesium sulfate and then evaporated to give 5,6-dimethyl-2-(4-nitro-1H-pyrazol-3-yl)-1H-benzimidazole (5.70 g) as an orange solid. LC-MS (METHOD B):  $R_T = 2.30$  minutes, 258.11 (M+H)<sup>+</sup>.

15 (b) 5-Ethyl-6-methyl-2-(4-nitro-1H-pyrazol-3-yl)-1H-benzimidazole



By proceeding in a manner similar to Example 249(a) above but using 4-nitro-1H-pyrazole-3-carboxylic acid (2-amino-4-ethyl-5-methylphenyl)amide [Reference Example 36(b)] there was prepared 5-ethyl-6-methyl-2-(4-nitro-1H-pyrazol-3-yl)-1H-benzimidazole as a yellow solid. LC-MS (METHOD B):  $R_T = 2.61$  minutes, 272.23 (M+H)<sup>+</sup>.

20 (c) 6-Chloro-5-methoxy-2-(4-nitro-1H-pyrazol-3-yl)-1H-benzimidazole

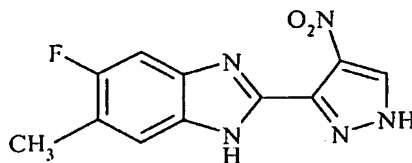


By proceeding in a manner similar to Example 249(a) above but using 4-nitro-1H-pyrazole-3-carboxylic acid (2-amino-5-chloro-4-methoxyphenyl)amide [1.5g, Reference Example 36(c)] there was

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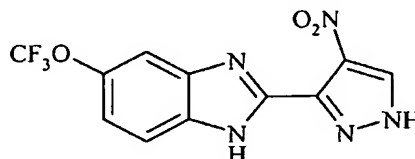
prepared 6-chloro-5-methoxy-2-(4-nitro-1H-pyrazol-3-yl)-1H-benzoimidazole (0.7g) as a dark solid.  
MS: 294 (M+H)<sup>+</sup>.

(d) 5-Fluoro-6-methyl-2-(4-nitro-1H-pyrazol-3-yl)-1H-benzoimidazole



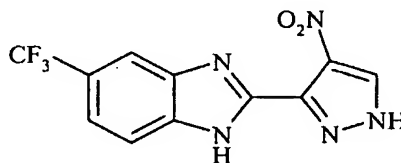
By proceeding in a manner similar to Example 249(a) above but using 4-Nitro-1H-pyrazole-3-carboxylic acid (2-amino-4-fluoro-5-methyl-phenyl)-amide [Reference Example 36(f)] there was prepared 5-fluoro-6-methyl-2-(4-nitro-1H-pyrazol-3-yl)-1H-benzoimidazole (0.730g) as a red solid.  
LC-MS (METHOD J): R<sub>T</sub> = 2.76 minutes, 262.21 (M+H)<sup>+</sup>.

(e) 2-(4-Nitro-1H-pyrazol-3-yl)-5-trifluoromethoxy-1H-benzoimidazole



By proceeding in a manner similar to Example 249(a) above but using 4-nitro-1H-pyrazole-3-carboxylic acid (2-amino-4-trifluoromethoxy-phenyl)-amide [Reference Example 36(g)] there was prepared 2-(4-nitro-1H-pyrazol-3-yl)-5-trifluoromethoxy-1H-benzoimidazole (1.02g) as a red solid.  
LC-MS (METHOD J): R<sub>T</sub> = 3.32 minutes, 314.19 (M+H)<sup>+</sup>.

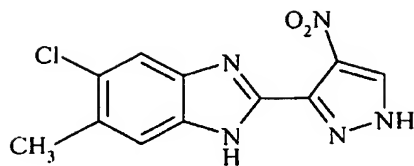
(f) 2-(4-Nitro-1H-pyrazol-3-yl)-5-trifluoromethyl-1H-benzoimidazole



By proceeding in a manner similar to Example 249(a) above but using 4-nitro-1H-pyrazole-3-carboxylic acid (2-amino-4-trifluoromethyl-phenyl)-amide [Reference Example 36(h)] there was prepared 2-(4-nitro-1H-pyrazol-3-yl)-5-trifluoromethyl-1H-benzoimidazole (0.195g) as an orange solid.  
MS: 298.07 (M+H)<sup>+</sup>. HPLC (METHOD B): R<sub>T</sub> = 3.50 minutes.

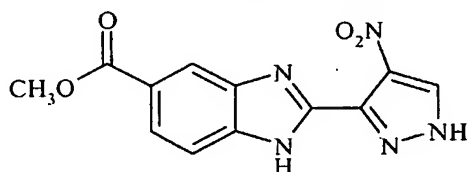
(g) 5-Chloro-6-methyl-2-(4-nitro-1H-pyrazol-3-yl)-1H-benzoimidazole

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By proceeding in a manner similar to Example 249(a) above but using 4-nitro-1H-pyrazole-3-carboxylic acid (2-amino-4-chloro-5-methyl-phenyl)-amide [Reference Example 36(i)] there was prepared 5-chloro-6-methyl-2-(4-nitro-1H-pyrazol-3-yl)-1H-benzimidazole (0.320g) as an orange solid. LC-MS (METHOD C):  $R_T = 3.36$  minutes, 314.19 (M+H)<sup>+</sup>.

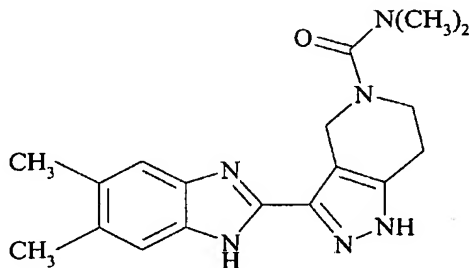
(h) 2-(4-Nitro-1H-pyrazol-3-yl)-1H-benzimidazole-5-carboxylic acid methyl ester



By proceeding in a manner similar to Example 249(a) above but using 3-amino-4-[(4-nitro-1H-pyrazole-3-carbonyl)-amino]-benzoic acid methyl ester [Reference Example 36(j)] there was prepared 2-(4-nitro-1H-pyrazol-3-yl)-1H-benzimidazole-5-carboxylic acid methyl ester (2.50g) as a yellow solid. LC-MS (METHOD B):  $R_T = 2.76$  minutes, 288.12 (M+H)<sup>+</sup>.

### EXAMPLE 250

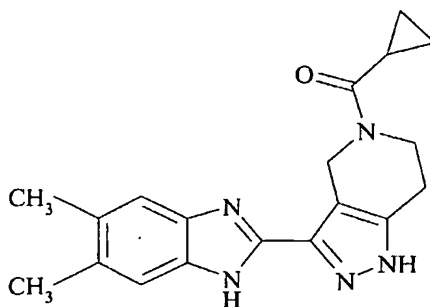
(a) 3-(5,6-Dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid isopropylamide



A solution of 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-4,5,6,7-tetrahydro-1H-pyrazolo[4,3-c]pyridine [0.150g, Example 251(a)] in dimethyl formamide (4ml) was treated with diisopropylethylamine (0.54ml) and then with dimethyl carbamyl chloride (0.122ml). After stirring for 1 hour the reaction mixture was quenched by the addition of methanol (0.1ml) and then diluted with ethyl acetate. This mixture was washed five times with brine and then evaporated. The residue was treated with tetrahydrofuran (9ml) and methanol (3ml) and the resulting solution was then treated with potassium

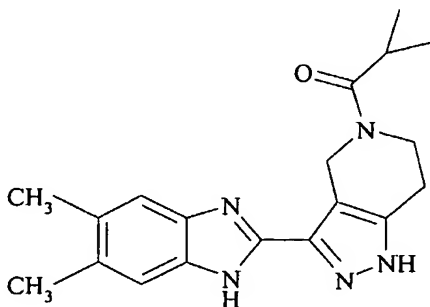
hydroxide (50mg). This mixture was stirred for 1 hour, then acidified by addition of hydrochloric acid (1M) and then extracted three times with ethyl acetate. The aqueous layer was basified by addition of sodium carbonate and the resulting suspension was filtered, then washed with water, then dried in air and then azeotroped with toluene to yield 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid isopropylamide as a pale brown solid. MS: 339 (M+H)<sup>+</sup>. HPLC (METHOD F1): R<sub>T</sub> = 8.67 minutes.

- (b) Cyclopropyl-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-methanone



By proceeding in a manner similar to Example 250(a) above, but using cyclopropanecarbonylchloride and stirring the reaction mixture for 16 hours, there was prepared cyclopropyl-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-methanone (68mg) as a pale yellow solid. LC-MS (METHOD M): R<sub>T</sub> = 10.57 minutes, 336 (M+H)<sup>+</sup>.

- (c) Isopropyl-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-methanone

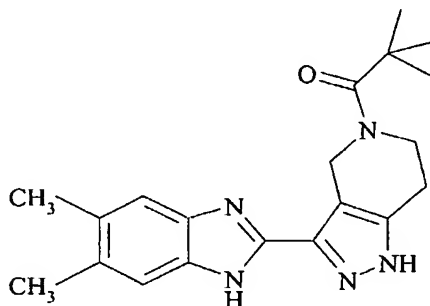


By proceeding in a manner similar to Example 250(b) above, but using isopropylcarbonyl chloride, cyclopropylcarbonylchloride there was prepared isopropyl-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-



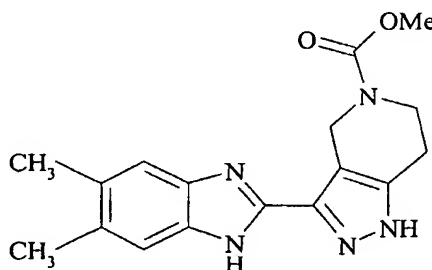
1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-methanone (68mg) as a white solid. LC-MS (METHOD M):  $R_T = 9.28$  minutes, 338 (M+H)<sup>+</sup>.

- (d) 1-[3-(5,6-Dimethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-2,2-dimethyl-propan-1-one



By proceeding in a manner similar to Example 250(b) above, but using trimethylacetyl chloride and filtering the precipitate formed upon basification with sodium carbonate, followed by azeotrope with toluene there was prepared 1-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-2,2-dimethyl-propan-1-one (49mg) as a pale yellow solid. LC-MS (METHOD M):  $R_T = 11.39$  minutes, 352 (M+H)<sup>+</sup>.

- (e) 3-(5,6-Dimethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid methyl ester

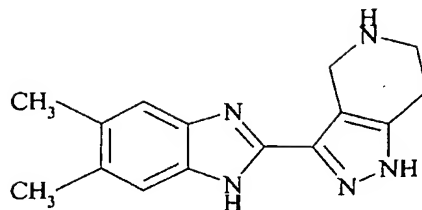


By proceeding in a manner similar to Example 250(b) above but using methylchloroformate there was prepared 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid methyl ester (89mg) as a pale brown solid. LC-MS (METHOD M):  $R_T = 8.95$  minutes, 326 (M+H)<sup>+</sup>.

#### EXAMPLE 251

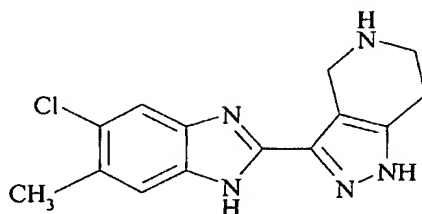
- (a) 3-(5,6-Dimethyl-1H-benzoimidazol-2-yl)-4,5,6,7-tetrahydro-1H-pyrazolo[4,3-c]pyridine

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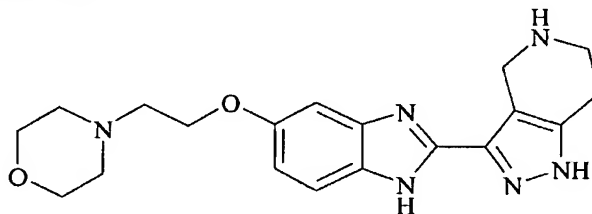
A solution of 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,5,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid *tert*-butyl ester [1.014g, Example 252(a)] in methanol (20ml) was treated with a solution of hydrogen chloride in dioxane (5ml, 4M). After stirring for 16 hours the reaction mixture was evaporated. The resulting beige solid was triturated with methanol to yield 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-4,5,6,7-tetrahydro-1H-pyrazolo[4,3-c]pyridine (0.523g) as a pale yellow solid. LC-MS (METHOD B):  $R_T = 0.63$  minutes; 268 (M+H)<sup>+</sup>.

(b) 3-(5-Chloro-6-methyl-1H-benzimidazol-2-yl)-4,5,6,7-tetrahydro-1H-pyrazolo[4,3-c]pyridine



By proceeding in a manner similar to Example 251(a) above, but using 3-(5-chloro-6-methyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid *tert*-butyl ester [Example 252(d)] there was prepared 3-(5-chloro-6-methyl-1H-benzimidazol-2-yl)-4,5,6,7-tetrahydro-1H-pyrazolo[4,3-c]pyridine (223mg) as a white solid. LC-MS (METHOD K):  $R_T = 3.91$  minutes, 288/290 (M+H)<sup>+</sup>.

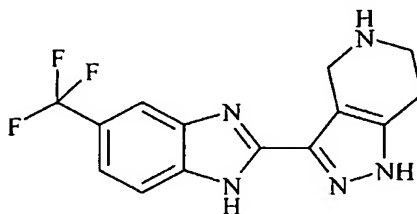
(c) 3-[5-(2-Morpholin-4-yl-ethoxy)-1H-benzimidazol-2-yl]-4,5,6,7-tetrahydro-1H-pyrazolo[4,3-c]pyridine



By proceeding in a manner similar to Example 251(a) above, but using 3-[5-(2-morpholin-4-yl-ethoxy)-1H-benzimidazol-2-yl]-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid *tert*-butyl ester [Example 252(e)] there was prepared 3-[5-(2-morpholin-4-yl-ethoxy)-1H-benzimidazol-2-yl]-4,5,6,7-

tetrahydro-1H-pyrazolo[4,3-c]pyridine (200mg) as an off-white solid. LC-MS (METHOD N):  $R_T$  = 2.55 minutes, 369.19 (M+H)<sup>+</sup>.

(d) 3-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-4,5,6,7-tetrahydro-1H-pyrazolo[4,3-c]pyridine



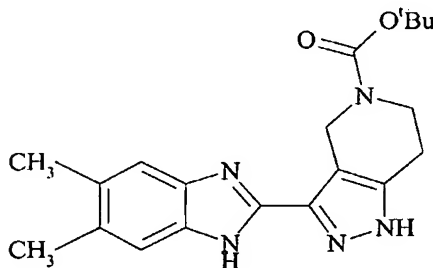
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By proceeding in a manner similar to Example 251(a) above but using 3-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid *tert*-butyl ester [Example 252(g)] there was prepared 3-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-4,5,6,7-tetrahydro-1H-pyrazolo[4,3-c]pyridine (500mg) as an off-white solid. LC-MS (METHOD N):  $R_T$  = 3.21 minutes, 308.17 (M+H)<sup>+</sup>.

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#### EXAMPLE 252

(a) 3-(5,6-Dimethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid *tert*-butyl ester



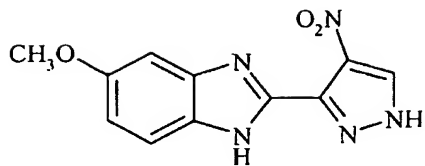
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A suspension of 1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-3,5-dicarboxylic acid, 3-(2-amino-4,5-dimethylphenyl)amide, 5-*tert*-butyl ester [1.091g, Reference Example 39(a)] in acetic acid (5ml) was heated to 100°C for 12 minutes in a Smith Creator Microwave. The mixture was neutralised with care by addition of solid sodium hydrogen carbonate and then extracted twice with ethyl acetate. The combined extracts were evaporated to yield 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid *tert*-butyl ester. LC-MS (METHOD B):  $R_T$  = 2.79 minutes; 368 (M+H)<sup>+</sup>.

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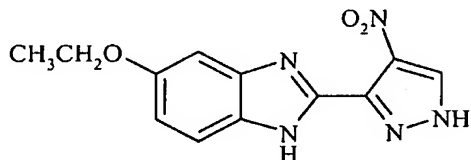
(b) 5-Methoxy-2-(4-nitro-1H-pyrazol-3-yl)-1H-benzoimidazole

-436-



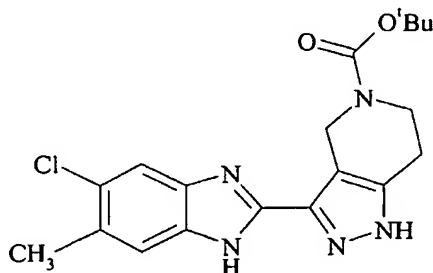
- By proceeding in a manner similar to Example 252(a) above but (i) using 4-nitro-1H-pyrazole-3-carboxylic acid (2-amino-4-methoxy-phenyl)-amide [410mg, Reference Example 36(d)] and heating at 120°C for 5 minutes, (ii) pouring the reaction mixture into water, adjusting to pH14 with 2N sodium hydroxide and filtering, and (iii) adjusting the pH of the filtrate to 6 with 2N hydrochloric acid and collecting the precipitate by filtration, there was prepared 5-methoxy-2-(4-nitro-1H-pyrazol-3-yl)-1H-benzimidazole (327mg) as a yellow powder. LC-MS (Method H):  $R_T = 1.61$  minutes, 260.25 (M+H)<sup>+</sup>, 258.26 (M-H)<sup>-</sup>.

- 10 (c) 5-Ethoxy-2-(4-nitro-1H-pyrazol-3-yl)-1H-benzimidazole



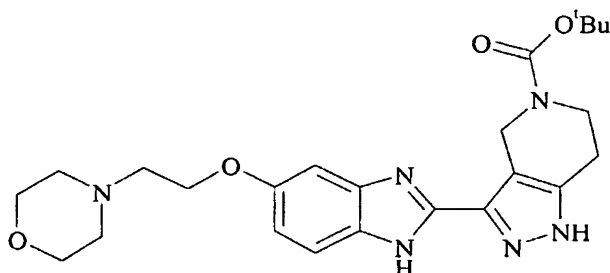
- By proceeding in a manner similar to Example 252(b) above but using 4-nitro-1H-pyrazole-3-carboxylic acid (2-amino-4-ethoxy-phenyl)-amide [824mg, Reference Example 36(e)] there was prepared 5-ethoxy-2-(4-nitro-1H-pyrazol-3-yl)-1H-benzimidazole (407mg) as a light brown powder.
- 15 LC-MS (Method H):  $R_T = 1.82$  minutes, 274.26 (M+H)<sup>+</sup>, 272.30 (M-H)<sup>-</sup>.

- (d) 3-(5-Chloro-6-methyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid tert-butyl ester



By proceeding in a manner similar to Example 252(b) above, but using 3-(2-amino-4-chloro-5-methyl-phenylcarbamoyl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid tert-butyl ester [Reference Example 39(c)] and heating at 110°C for 15 minutes, there was prepared 3-(5-chloro-6-methyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid tert-butyl ester (391mg) as a brown solid. LC-MS (METHOD J):  $R_T = 3.53$  minutes, 388 (M+H)<sup>+</sup>.

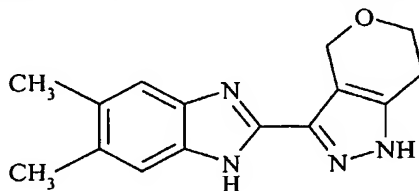
- (e) 3-[5-(2-Morpholin-4-yl-ethoxy)-1H-benzimidazol-2-yl]-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid tert-butyl ester



- 10 By proceeding in a manner similar to Example 252(b) above, but using 3-[2-amino-4-(2-morpholin-4-yl-ethoxy)-phenylcarbamoyl]-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid tert-butyl ester [Reference Example 39(d)] there was prepared 3-[5-(2-morpholin-4-yl-ethoxy)-1H-benzimidazol-2-yl]-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid tert-butyl ester (350mg) as a brown solid. LC-MS (METHOD N):  $R_T = 3.53$  minutes, 469.24 (M+H)<sup>+</sup>.

15

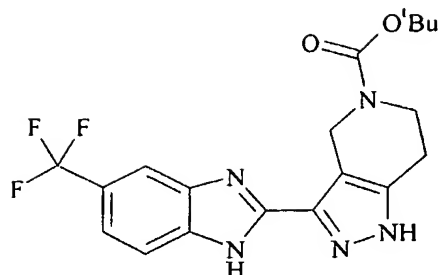
- (f) 3-(5,6-Dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyran[4,3-c]pyrazole



- 20 By proceeding in a manner similar to Example 252(a) above but using 1,4,6,7-tetrahydro-pyran[4,3-c]pyrazole-3-carboxylic acid (2-amino-4,5-dimethyl-phenyl)-amide [Reference Example 39(e)] and heating at 120°C for 3 minutes there was prepared 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyran[4,3-c]pyrazole (49mg) as a pale brown solid. MS: 269 (M+H)<sup>+</sup>. HPLC (METHOD C1):  $R_T = 19.68$  minutes.

- 25 (g) 3-(5-trifluoromethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid tert-butyl ester

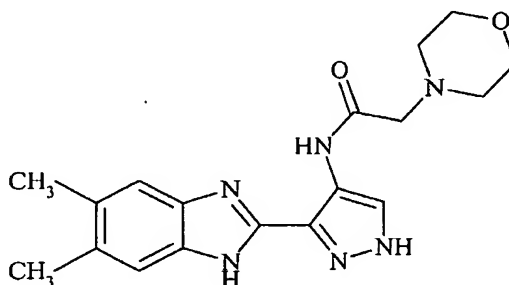
-438-



By proceeding in a manner similar to Example 252(a) above but using 3-(2-amino-4-trifluoromethyl-phenylcarbamoyl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid tert-butyl ester [Reference Example 39(f)] there was prepared 3-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid tert-butyl ester (950mg) was prepared as a brown solid. LC-MS (METHOD N):  $R_T = 3.90$  minutes, 408 ( $M+H$ )<sup>+</sup>.

#### EXAMPLE 253

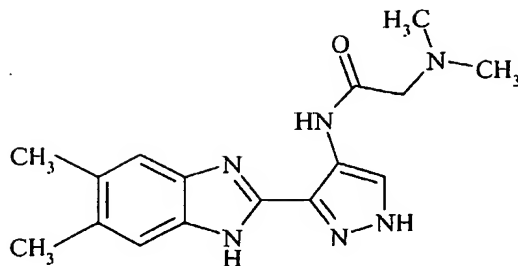
(a) N-[3-(5,6-Dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-2-morpholin-4-yl-acetamide



A stirred solution of 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-ylamine [100mg, Example 233(c)] and diisopropylethylamine (307μl) in dichloromethane (10ml) was treated with chloroacetyl chloride (105μl). The reaction mixture was stirred for 30 minutes at room temperature, then treated with morpholine (575μl), then kept at room temperature overnight and then evaporated. The oily residue was partitioned between ethyl acetate and water and the organic phase was washed with water, then dried over magnesium sulfate and then evaporated. The residue was subjected to flash chromatography on silica eluting with ethyl acetate to give the N-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-2-morpholin-4-yl-acetamide (49.9mg) as an off-white solid. MS: 355.68 ( $M+H$ )<sup>+</sup>. HPLC (METHOD B1):  $R_T = 8.28$  minutes.

(b) 2-Dimethylamino-N-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-acetamide

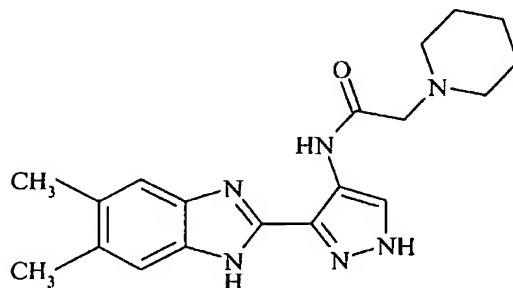
-439-



By proceeding in a manner similar to Example 253(a) above but using dimethylamine hydrochloride there was prepared 2-dimethylamino-N-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-acetamide (52mg) as a white solid. LC-MS (METHOD M):  $R_T = 8.28$  minutes, 355.68 (M+H)<sup>+</sup>.

5

(c) N-[3-(5,6-Dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-2-piperidin-1-yl-acetamide

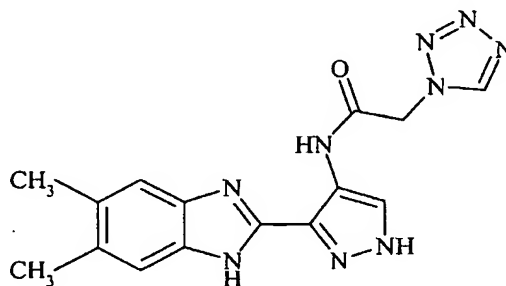


By proceeding in a manner similar to Example 253(a) above but using piperidine there was prepared N-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-2-piperidin-1-yl-acetamide (4mg) as a

10 white solid. LC-MS (METHOD M):  $R_T = 7.69$  minutes, 353.68 (M+H)<sup>+</sup>.

#### EXAMPLE 254

(a) N-[3-(5,6-Dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-2-(1H-1,2,3,4-tetraazol-1-yl)-acetamide

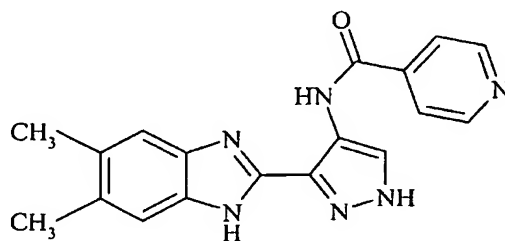


15

A stirred solution of 1-(3-dimethylaminopropyl)-3-ethylcarbodiimide hydrochloride (295.7 mg) and diisopropylethylamine (269μl) in dimethylformamide (10ml) were treated with 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-ylamine [100mg, Example 233(c)] and 2-(1H-1,2,3,4-tetraazol-1-yl)

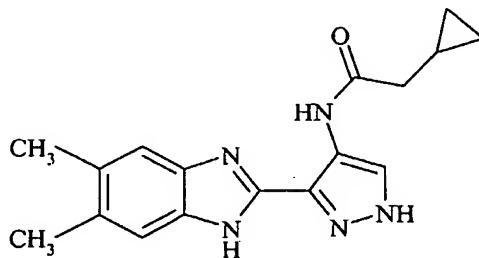
- acetic acid (197.8mg). The reaction mixture was stirred for 72 hours then treated further with 1-(3-dimethylaminopropyl)-3-ethylcarbodiimide hydrochloride (295.7mg), diisopropylethylamine (269 $\mu$ l) and 2-(1H-1,2,3,4-tetraazol-1-yl) acetic acid (197.8mg). Stirring was continued for a further 48 hours then the reaction mixture was partitioned between ethyl acetate and water. The organic phase was evaporated and the residue was treated with 1N potassium hydroxide in a mixture of methanol and tetrahydrofuran (1:4, 8 ml). After 1 hour this mixture was extracted with ethyl acetate. The extract was washed with brine, then dried over magnesium sulfate and then evaporated to dryness. The residue was subjected to preparative HPLC to give N-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-2-(1H-1,2,3,4-tetraazol-1-yl)-acetamide (13.7mg) as an off-white solid. MS: 338.14 (M+H)<sup>+</sup>.
- 10 HPLC (METHOD B1): R<sub>T</sub> = 7.26 minutes.

(b) N-[3-(5,6-Dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-isonicotinamide



- By proceeding in a manner similar to Example 254(a) above but using isonicotinic acid there was prepared N-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-isonicotinamide (9mg) as a white solid. LC-MS (METHOD L): R<sub>T</sub> = 8.71 minutes, 331.21 (M+H)<sup>+</sup>.
- 15

(c) 2-Cyclopropyl-N-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-acetamide

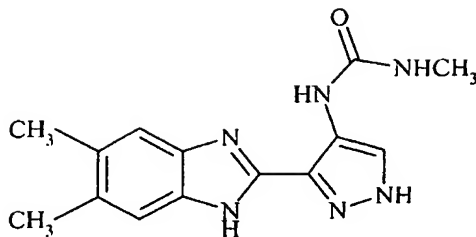


- By proceeding in a manner similar to Example 254(a) above but using cyclopropylacetic acid there was prepared 2-cyclopropyl-N-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-acetamide (98mg) as a light pink solid. LC-MS (METHOD M): R<sub>T</sub> = 11.04 minutes, MS: 310 (M+H)<sup>+</sup>.
- 20

EXAMPLE 255

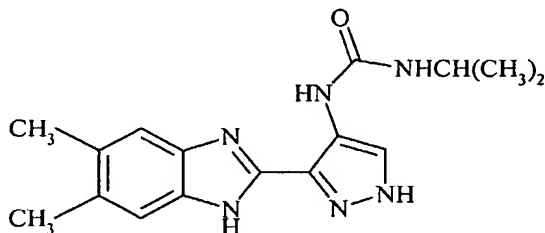
- (a) 1-[3-(5,6-Dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-3-methyl-urea
- 25





A solution of 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-ylamine [0.500g, Example 233(c)] in tetrahydrofuran (5ml) was treated with methyl isocyanate (0.502ml) and the mixture stirred at ambient temperature for 16 hours. The mixture was then concentrated in vacuo and the residue was redissolved in 1N potassium hydroxide in a mixture of methanol and tetrahydrofuran (1:3, 5ml). The mixture was stirred for a further 1 hour, then concentrated and then partitioned between ethyl acetate and water. The aqueous layer was extracted three times with ethyl acetate and the combined organic extracts were washed with brine, then dried over magnesium sulfate, and then evaporated. The residue was subjected to flash column chromatography on silica eluting initially with a mixture of ethyl acetate and hexane (1:1, v/v) and then with ethyl acetate to afford 1-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-methyl-urea (230mg) as a white solid. MS: 269 (M+H)<sup>+</sup>. HPLC (METHOD D1): R<sub>T</sub> = 5.97 minutes.

(b) 1-[3-(5,6-Dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-isopropyl-urea

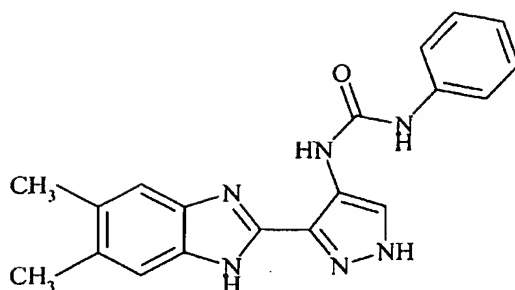


15

By proceeding in a manner similar to Example 255(a) above but using isopropyl isocyanate there was prepared 1-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-isopropyl-urea as a white solid. MS: 313 (M+H)<sup>+</sup>. HPLC (METHOD D1): R<sub>T</sub> = 10.94 minutes.

(c) 1-[3-(5,6-Dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-phenyl-urea

20

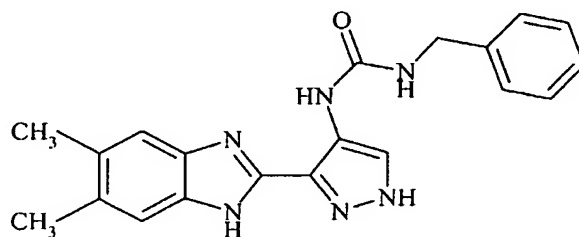


By proceeding in a manner similar to Example 255(a) above but using phenyl isocyanate there was prepared 1-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-phenyl-urea as a white solid.

MS: 347 (M+H)<sup>+</sup>. HPLC (METHOD B1): R<sub>T</sub> = 16.16 minutes.

5

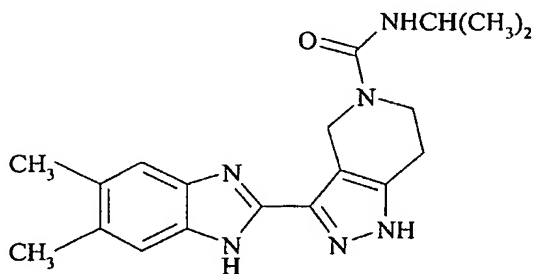
(d) 1-Benzyl-3-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-urea



By proceeding in a manner similar to Example 255(a) above but using benzyl isocyanate there was prepared 1-benzyl-3-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-urea as a white solid.

10 MS: 361(M+H)<sup>+</sup>. HPLC (METHOD D1): R<sub>T</sub> = 7.78 minutes.

(e) 3-(5,6-Dimethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid isopropylamide



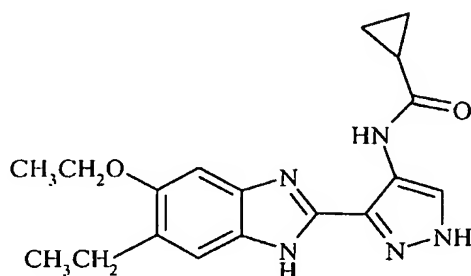
15 By proceeding in a manner similar to Example 255(a) above but using 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-4,5,6,7-tetrahydro-1H-pyrazolo[4,3-c]pyridine [Example 251(a)] and isopropylisocyanate, and subjecting the reaction product to flash column chromatography eluting with ethyl acetate/methanol (19:1, v/v), there was prepared 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1,4,6,7-

tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid isopropylamide (93.3mg) as an off-white solid.

LC-MS (METHOD M):  $R_T = 10.15$  minutes, 353 (M+H)<sup>+</sup>.

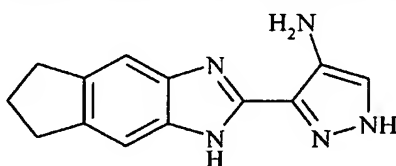
#### EXAMPLE 256

- 5 (a) Cyclopropanecarboxylic acid[3-(5-ethoxy-6-ethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]amide



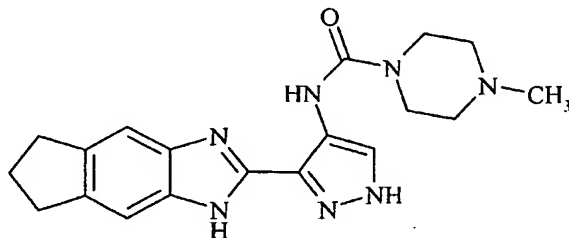
- A solution of cyclopropanecarboxylic acid [3-(5-ethoxy-6-ethyl-1H-benzoimidazol-2-yl)-1-(tetrahydropyran-2-yl)-1H-pyrazol-4-yl]amide [0.3g, Reference Example 48(a)] and p-toluenesulfonic acid hydrate (1.2g) in ethanol (25mL) was heated in an 80°C in an oil bath for 1 hour, then cooled, and then poured into aqueous sodium bicarbonate solution. The aqueous mixture was extracted twice with ethyl acetate (75mL). The combined extracts were evaporated and the residue was redissolved in a mixture of methylene chloride (100mL) and methanol (10mL). This solution was washed with aqueous sodium bicarbonate, to remove some residual p-toluenesulfonic acid, then evaporated to give
- 10
- 15 cyclopropanecarboxylic acid[3-(5-ethoxy-6-ethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]amide (120mg) as a white solid. LC-MS (Method E):  $R_T = 2.36$  minutes, 340 (M+H)<sup>+</sup>.

- (b) 3-(1,5,6,7-Tetrahydro-1,3-diaza-s-indacen-2-yl)-1H-pyrazol-4-ylamine



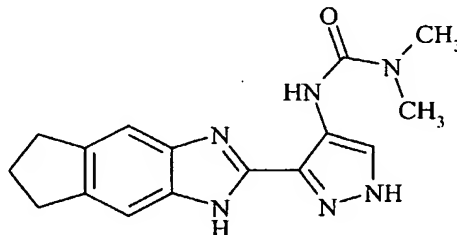
- 20 By proceeding in a similar manner to Example 256(a) but using 3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1-(tetrahydropyran-2-yl)-1H-pyrazol-4-ylamine [0.9g, Reference Example 49(d)] and p-toluenesulfonic acid (1.0g) in ethanol (100 mL) and carrying out the reaction at 55°C for 2 hours, there was prepared 3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1H-pyrazol-4-ylamine (800 mg) as a brown solid. LC-MS (Method G):  $R_T = 2.68$  minutes, 240 (M+H)<sup>+</sup>.

(c) 4-Methylpiperazine-1-carboxylic acid [3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1H-pyrazol-4-yl]amide



By proceeding in a similar manner to Example 256(a) but (i) using 4-methylpiperazine-1-carboxylic acid [3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1-(tetrahydropyran-2-yl)-1H-pyrazol-4-yl]amide [171mg, Reference Example 48(b)], (ii) carrying out the reaction at 55°C for 1.5 hours, then at 70°C for 1 hour, and (iii) subjecting the reaction product to chromatography on silica gel (ethyl acetate/gradient 0 to 20% methanol), there was prepared 4-methylpiperazine-1-carboxylic acid [3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1H-pyrazol-4-yl]amide (55 mg) as a white solid. LC-MS (Method E):  $R_T = 1.53$  minutes, 366 (M+H)<sup>+</sup>.

(d) 1,1-Dimethyl-3-[3-(1,5,6,7-tetrahydro-s-indacen-2-yl)-1H-pyrazol-4-yl]urea



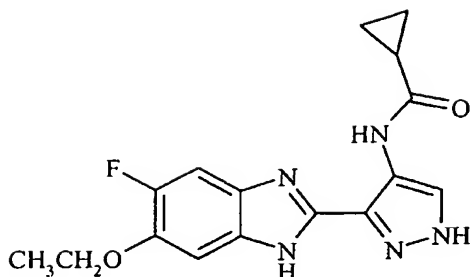
By proceeding in a similar manner to Example 256(c) but using 1,1-dimethyl-3-[3-(1,5,6,7-tetrahydro-s-indacen-2-yl)-1-(tetrahydropyran-2-yl)-1H-pyrazol-4-yl]urea (230mg) and p-toluenesulfonic acid hydrate [40 mg, Reference Example 48(c)] there was prepared 1,1-dimethyl-3-[3-(1,5,6,7-tetrahydro-s-indacen-2-yl)-1H-pyrazol-4-yl]urea (106 mg) as a tan solid. LC-MS (Method E):  $R_T = 1.97$  minutes, 311 (M+H)<sup>+</sup>.

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#### EXAMPLE 257

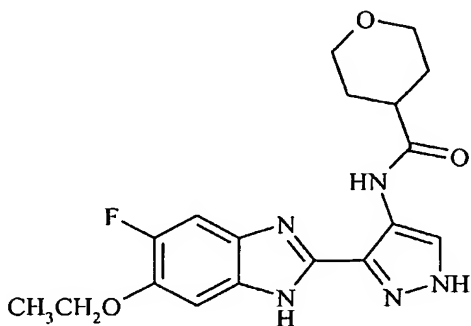
(a) Cyclopropanecarboxylic acid [3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]amide

-445-



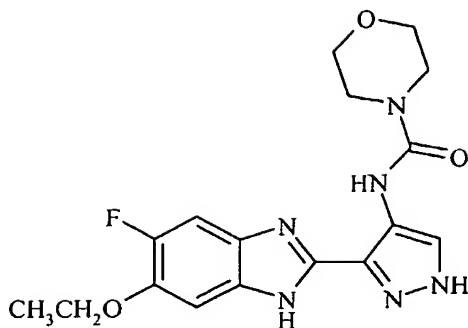
A solution of cyclopropanecarboxylic acid [3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1-(tetrahydropyran-2-yl)-1H-pyrazol-4-yl]amide [90mg, Reference Example 48(d)] in a 1/1 mixture of trifluoroacetic acid and dichloromethane (30mL) was stirred for 5 hours and then evaporated. The residue was mixed with ethyl acetate (30mL) and aqueous sodium bicarbonate (30mL). The organic layer was evaporated to give cyclopropanecarboxylic acid [3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]amide (44 mg). LC-MS (Method E):  $R_T = 2.34$  minutes, 330 (M+H)<sup>+</sup>.

(b) Tetrahydropyran-4-carboxylic acid [3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1H-pyrazole-4-yl]amide



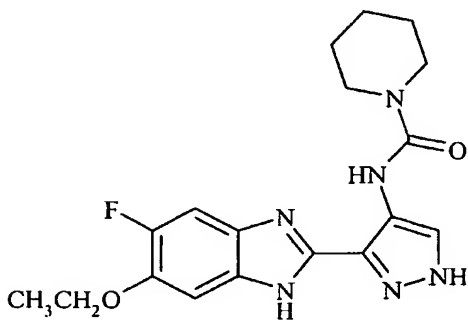
By proceeding in a similar manner to Example 257(a) but using tetrahydropyran-4-carboxylic acid [3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1-(tetrahydropyran-2-yl)-1H-pyrazole-4-yl]amide [120 mg, Reference Example 48(e)] there was prepared tetrahydropyran-4-carboxylic acid [3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1H-pyrazole-4-yl]amide (65mg). LC-MS (Method E)  $R_T = 2.17$  minutes, 374 (M+H)<sup>+</sup>.

(c) Morpholine-4-carboxylic acid[3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]amide



By proceeding in a similar manner to Example 257(a) but using morpholine-4-carboxylic acid[3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1-(tetrahydropyran-2-yl)-1H-pyrazol-4-yl]amide [140mg, Reference Example 48(f)] there was prepared morpholine-4-carboxylic acid[3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]amide (65mg). LC-MS (Method E):  $R_T = 2.62$  minutes, 375 (M+H)<sup>+</sup>.

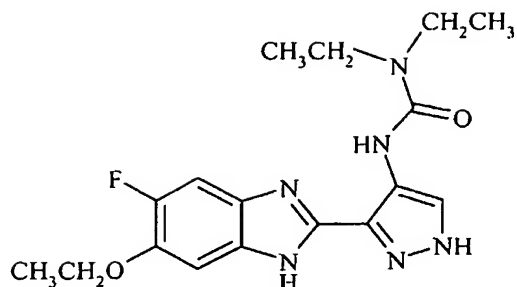
(d) Piperidine-4-carboxylic acid[3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]amide



By proceeding in a similar manner to Example 257(a) but using piperidine-4-carboxylic acid[3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1-(tetrahydropyran-2-yl)-1H-pyrazol-4-yl]amide [127mg, Reference Example 48(g)] there was prepared piperidine-4-carboxylic acid[3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]amide (65mg). LC-MS (Method E):  $R_T = 3.15$  minutes. MS 373 (M+H)<sup>+</sup>.

(e) 3-[6-Ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-diethylurea

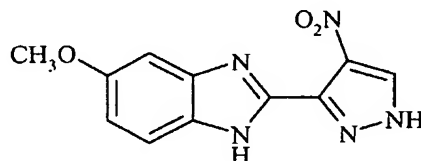
-447-



By proceeding in a similar manner to Example 257(a) but using 3-[6-ethoxy-5-fluoro-1H-benzimidazol-2-yl]-1-(tetrahydropyran-2-yl)-1H-pyrazol-4-yl]-1,1-diethylurea (110 mg, Reference Example 48(h)) there was prepared 3-[6-ethoxy-5-fluoro-1H-benzimidazol-2-yl]-1H-pyrazol-4-yl]-1,1-diethylurea

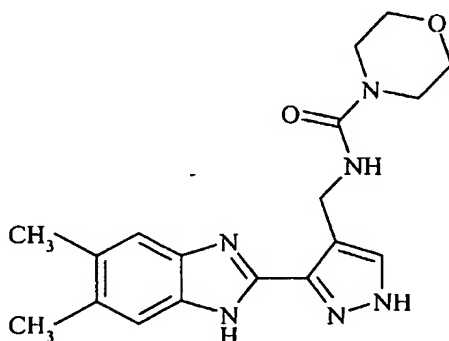
5 (65mg). LC-MS (Method E):  $R_T = 3.13$  minutes, 361 (M+H)<sup>+</sup>.

(f) 5-Methoxy-2-(4-nitro-1H-pyrazol-3-yl)-1H-benzimidazole



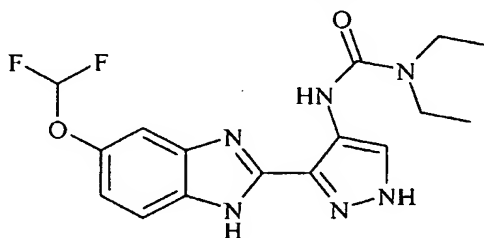
By proceeding in a similar manner to Example 257(a) but using 5-methoxy-2-[4-nitro-1-(tetrahydropyran-2-yl)-1H-pyrazol-3-yl]-1H-benzimidazole (282mg, Reference Example 50(d)) there was prepared 5-methoxy-2-(4-nitro-1H-pyrazol-3-yl)-1H-benzimidazole (373mg) as a red powder. LC-MS (Method H):  $R_T = 1.60$  minutes, 260.22 (M+H)<sup>+</sup>, 258.23 (M-H)<sup>-</sup>.

(g) Morpholine-4-carboxylic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-ylmethyl]-amide



- By proceeding in a similar manner to Example 257(a) but using morpholine-4-carboxylic acid (2,4-dimethoxy-benzyl)-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1-(tetrahydro-pyran-2-yl)-1H-pyrazol-4-ylmethyl]-amide (Reference Example 59), subjecting the reaction product to flash chromatography on silica [eluting with dichloromethane to dichloromethane/methanol (9:1)] and recrystallising from water/acetonitrile followed by trituration with diethyl ether there was prepared morpholine-4-carboxylic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-ylmethyl]-amide (16.5mg) as a white solid. LC-MS (Method M):  $R_T = 6.97$  minutes, MS: 355.36 (M+H)<sup>+</sup>, 353.39 (M-H)<sup>-</sup>.

(h) 3-[3-(5-Difluoromethoxy-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-diethyl-urea

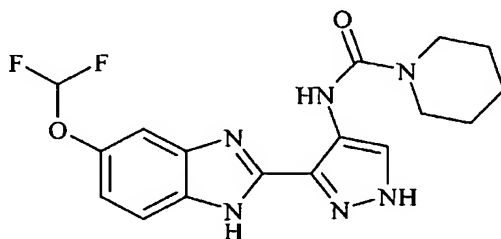


10

By proceeding in a manner similar to Example 257(a) above but using 3-[3-(5-difluoromethoxy-1H-benzimidazol-2-yl)-1-(tetrahydro-pyran-2-yl)-1H-pyrazol-4-yl]-1,1-diethyl-urea [Reference Example 48(j)] there was prepared 3-[3-(5-difluoromethoxy-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-diethyl-urea (60mg) as a white solid. LC-MS (METHOD L):  $R_T = 10.61$  minutes.

- 15 <sup>1</sup>H NMR(CD<sub>3</sub>OD):  $\delta$  1.24 (t, 6H), 3.43 (q, 4H), 6.72 (bt, 1H), 6.98 (d, 1H), 7.26 (s, 1H), 7.47 (d, 1H), 7.91 (s, 1H).

(i) Piperidine-1-carboxylic acid [3-(5-difluoromethoxy-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide



20

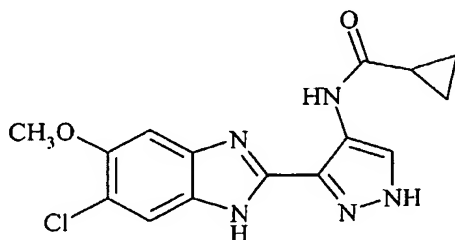
By proceeding in a manner similar to Example 257(a) above but using piperidine-1-carboxylic acid [3-(5-difluoromethoxy-1H-benzimidazol-2-yl)-1-(tetrahydro-pyran-2-yl)-1H-pyrazol-4-yl]-amide [Reference Example 48(k)], there was prepared piperidine-1-carboxylic acid [3-(5-difluoromethoxy-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide (52mg) as a white solid. HPLC (METHOD E1):  $R_T$



= 10.78 minutes.  $^1\text{H NMR}(\text{CD}_3\text{OD})$ :  $\delta$  1.69 (bm, 6H), 3.64 (bm, 4H), 6.82 (bt, 1H), 7.09 (bm, 1H), 7.39 (bm, 1H), 7.61 (bm, 1H), 8.05 (bm, 1H).

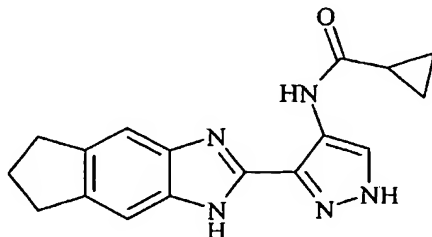
### EXAMPLE 258

- 5 (a) Cyclopropanecarboxylic acid [3-(6-chloro-5-methoxy-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide



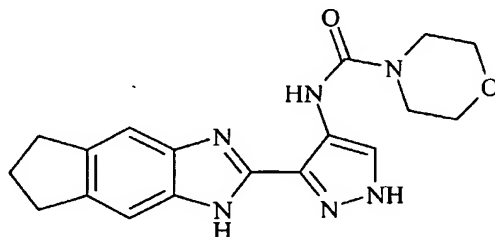
- A solution of 3-(6-chloro-5-methoxy-1H-benzimidazol-2-yl)-1H-pyrazol-4-ylamine [50mg, Example 233(e)] and diisopropylethylamine (40 $\mu$ L) in dichloromethane (20mL), stirred at room temperature,  
 10 was treated with cyclopropanecarbonyl chloride (51 $\mu$ L, 3 eq). After stirring for a further 20 hours the reaction mixture was evaporated and the residue was subjected to chromatography on silica gel (ethyl acetate/heptane 1/1) to give the bis-acylated product (60mg) as an orange solid. MS 400 (M+H) $^+$ . The bis-acylated product was dissolved in methanol (5 mL), then treated with potassium hydroxide solution (0.5mL, 5N), then stirred at 60°C for 1 hour, then cooled and then evaporated. The residue was treated  
 15 with water (15mL) and the pH of the aqueous mixture was adjusted to 5 and then extracted twice with ethyl acetate (25mL). The combined extracts were dried with magnesium sulfate, then evaporated and the residue was triturated with diisopropyl ether, filtered and the precipitate was vacuum dried at 60°C to give cyclopropanecarboxylic acid [3-(6-chloro-5-methoxy-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide (11 mg) as an off-white solid, mp 225-226°C. LC-MS (Method E):  $R_T$  = 2.92 minutes, 332  
 20 (M+H) $^+$ .

- (b) Cyclopropanecarboxylic acid [3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1H-pyrazol-4-yl]amide



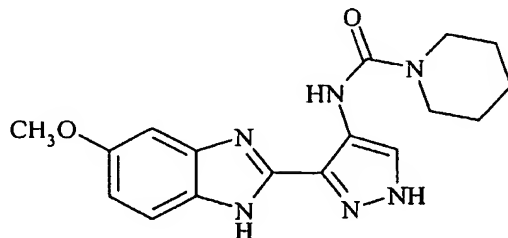
- By proceeding in a similar manner to Example 258(a) above but (i) treating a solution of 3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1H-pyrazol-4-ylamine [310 mg, Example 256(b)] and triethylamine (4 eq) in tetrahydrofuran (15 mL) with cyclopropanecarbonyl chloride (4 eq), (ii) stirring the reaction mixture at 60°C for 2 hours, (iii) treating the resulting bis-acylated product with methanolic potassium hydroxide (20 mL, 1.05g KOH) at 40°C for 1 hour followed by treatment with aqueous ammonium chloride (200 mL), (iii) extracting this mixture three times with ethyl acetate (100mL), (iv) evaporating the combined extracts and (v) chromatographing the residue on silica gel (ethyl acetate / gradient of 50-0% heptane) there was prepared cyclopropanecarboxylic acid [3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1H-pyrazol-4-yl]amide (50mg) as a yellow solid. LC-MS (Method E)  $R_T = 2.05$  minutes, 308 (M+H)<sup>+</sup>.

(c) Morpholine-4-carboxylic acid[3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1H-pyrazol-4-yl]-amide



- By proceeding in a similar manner to Example 258(b) above but using morpholine-4-carbonyl chloride there was prepared morpholine-4-carboxylic acid[3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1H-pyrazol-4-yl]-amide as an orange solid. LC-MS (Method E)  $R_T = 2.45$  minutes, 353 (M+H)<sup>+</sup>.

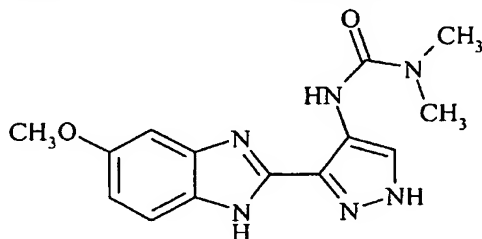
- (d) Piperidine-1-carboxylic acid [3-(5-methoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide



By proceeding in a similar manner to Example 258(a) above treating 3-(5-methoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-ylamine [257mg, Example 233(f)] with 1-piperidine-carbonyl chloride in the presence of diisopropylethylamine and using tetrahydrofuran as the solvent there was prepared

piperidine-1-carboxylic acid [3-(5-methoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide (46.1mg) as a white solid. LC-MS (Method L)  $R_T = 6.43$  minutes,  $341.28 (M+H)^+$ .

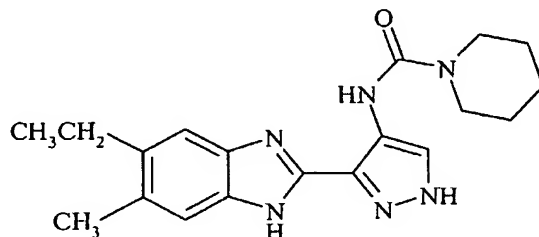
(e) 3-[3-(5-Methoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-dimethyl-urea



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By proceeding in a manner similar to Example 258(d) above but using dimethylcarbamyl chloride there was prepared 3-[3-(5-methoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-dimethyl-urea as a white solid. LC-MS (Method M):  $R_T = 7.64$  minutes,  $301.35 (M+H)^+$ .

10 (f) Piperidine-1-carboxylic acid [3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide



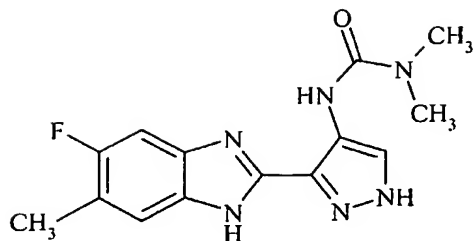
By proceeding in a manner similar to Example 258(d) above but (i) using 3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-ylamine [400mg, Example 233(d)], 1-piperidinecarbonyl chloride (1.25ml) and diisopropylethylamine (1.74ml) with tetrahydrofuran (20ml) as the solvent and, stirring the reaction mixture at ambient temperature for 48 hours, then at 50°C for 24 hours, (ii) treating the bis-acylated product with 1M potassium hydroxide in methanol/tetrahydrofuran (1:3, 20ml) at room temperature, and (iii) subjecting the product to flash column chromatography on silica [eluting with ethyl acetate/hexane (1:1 v/v) to ethyl acetate/hexane (3:1 v/v)], there was prepared piperidine-1-carboxylic acid [3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide (425mg) as a white solid. LC-MS (METHOD L):  $R_T = 7.55$  minutes,  $353.34 (M+H)^+$ .

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(g) 3-[3-(5-Fluoro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-dimethyl-urea

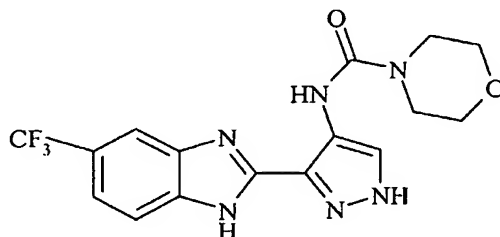
-452-



By proceeding in a manner similar to Example 258(f) above but using 3-(5-fluoro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-ylamine [Example 233(h)] and *N,N'*-dimethylcarbamyldichloride there was prepared 3-[3-(5-fluoro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-dimethyl-

5 urea (32mg) as a white solid. LC-MS (METHOD M):  $R_T = 10.40$  minutes, 303.34 (M+H)<sup>+</sup>.

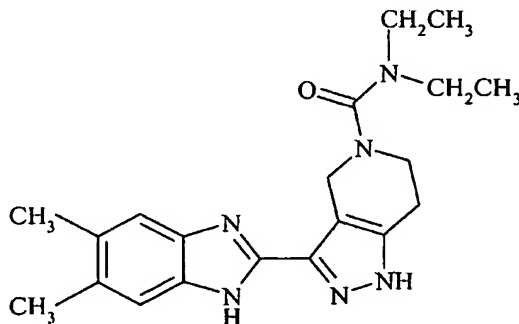
(h) Morpholine-4-carboxylic acid [3-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide



10 By proceeding in a manner similar to Example 258(f) above but using 3-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-ylamine [Example 233(j)] and morpholine-1-carbonyl chloride there was prepared morpholine-4-carboxylic acid [3-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide (131mg) was prepared as a white solid. MS: 379.08 (M-H)<sup>-</sup>. HPLC (METHOD E1):  $R_T = 10.61$  minutes.

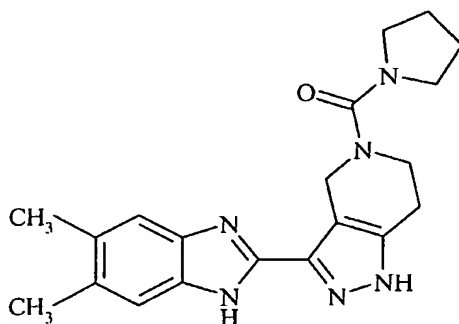
15

(i) 3-(5,6-Dimethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid diethylamide



By proceeding in a manner similar to Example 258(f) above, but using 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-4,5,6,7-tetrahydro-1H-pyrazolo[4,3-c]pyridine [Example 251(a)] and diethylcarbonyl chloride, and subjecting the reaction product to flash column chromatography eluting with ethyl acetate to ethyl acetate/methanol (49:1, v/v), there was prepared 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid diethylamide (20.9mg) as an off-white solid. LC-MS (METHOD J):  $R_T = 3.44$  minutes, 367 (M+H)<sup>+</sup>.

(j) [3-(5,6-Dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-pyrrolidin-1-yl-methanone

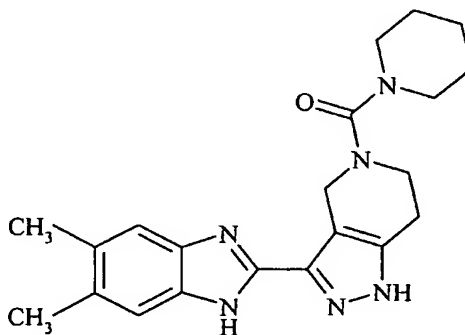


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By proceeding in a manner similar to Example 258(i) above, but using 1-pyrrolidincarbonyl chloride and triturating the reaction product with ethyl acetate, methanol and dichloromethane, there was prepared [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-pyrrolidin-1-yl-methanone (68mg) as an off-white solid. MS: 365 (M+H)<sup>+</sup>. HPLC (METHOD E1):

15  $R_T = 10.32$  minutes.

(k) [3-(5,6-Dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-piperidin-1-yl-methanone

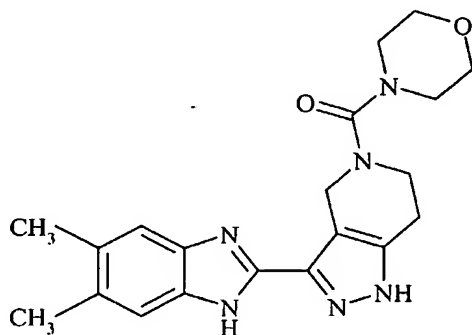


20 By proceeding in a manner similar to Example 258(f) above, but using 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-4,5,6,7-tetrahydro-1H-pyrazolo[4,3-c]pyridine [Example 251(a)] and subjecting

the reaction product to flash column chromatography eluting with ethyl acetate/petrol (5:1, v/v) to 100% ethyl acetate to ethyl acetate/methanol (19:1, v/v), there was prepared [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-piperidin-1-yl-methanone (93.3mg) as an off-white solid. LC-MS (METHOD L):  $R_T = 6.77$  minutes, 379 (M+H)<sup>+</sup>.

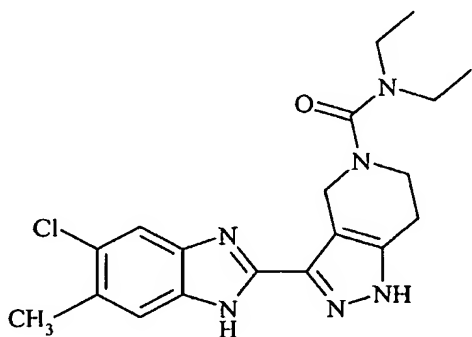
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- (l) [3-(5,6-Dimethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-morpholin-4-yl-methanone



By proceeding in a manner similar to Example 258(k) above, but using 1-morpholinecarbonyl chloride and azeotroping the reaction product with toluene and dichloromethane, there was prepared [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-morpholin-4-yl-methanone (32mg) as an off-white solid. MS: 381 (M+H)<sup>+</sup>. HPLC (METHOD E1):  $R_T = 9.39$  minutes.

- 15 (m) 3-(5-Chloro-6-methyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid diethylamide

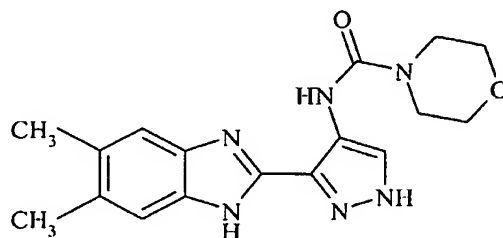


By proceeding in a manner similar to Example 258(a) above but (i) using 3-(5-chloro-6-methyl-1H-benzoimidazol-2-yl)-4,5,6,7-tetrahydro-1H-pyrazolo[4,3-c]pyridine [Example 251(b)] and diethylcarbonyl chloride, and (ii) subjecting the reaction product to flash column chromatography, eluting with ethyl acetate to ethyl acetate/methanol (47:3, v/v) followed by trituration with ethanol,

20

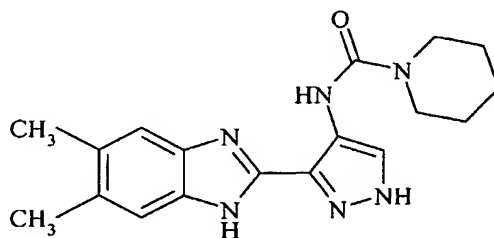
there was prepared 3-(5-chloro-6-methyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid diethylamide (35.6mg) as a pale yellow solid. MS: 387/389 (M+H)<sup>+</sup>. HPLC (METHOD E1): R<sub>T</sub> = 11.07 minutes.

- 5 (n) Morpholine-4-carboxylic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide



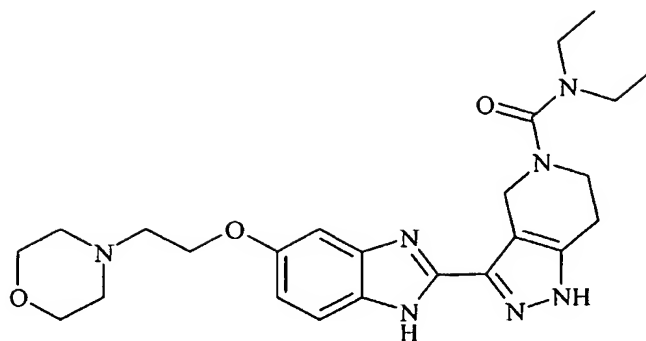
- By proceeding in a manner similar to Example 258(p) above but using 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-ylamine [Example 233(c)] and 1-morpholinecarbonyl chloride there was prepared morpholine-4-carboxylic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide (206mg) as a white solid. LC-MS (METHOD L): R<sub>T</sub> = 7.36 minutes, 341 (M+H)<sup>+</sup>.

- (o) Piperidine-1-carboxylic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide



- By proceeding in a manner similar to Example 258(p) above but using 1-piperidinecarbonyl chloride there was prepared piperidine-1-carboxylic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide (185mg) as a white solid. LC-MS (METHOD M): R<sub>T</sub> = 10.79 minutes, 339 (M+H)<sup>+</sup>.

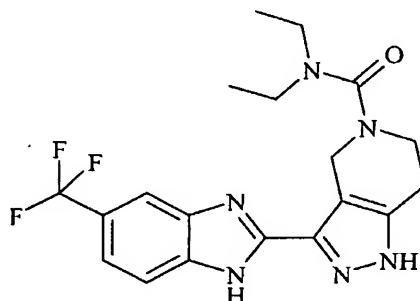
- (p) 3-[5-(2-Morpholin-4-yl-ethoxy)-1H-benzoimidazol-2-yl]-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid diethylamide



By proceeding in a manner similar to Example 258(a) above but using 3-[5-(2-morpholin-4-yl-ethoxy)-1H-benzoimidazol-2-yl]-4,5,6,7-tetrahydro-1H-pyrazolo[4,3-c]pyridine [Example 251(c)] and diethylcarbamyl chloride there was prepared 3-[5-(2-morpholin-4-yl-ethoxy)-1H-benzoimidazol-2-yl]-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid diethylamide (28mg) as a white solid.

MS: 468.30 (M+H)<sup>+</sup>. HPLC (METHOD E1): R<sub>T</sub> = 9.47 minutes.

- (q) 3-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid diethylamide



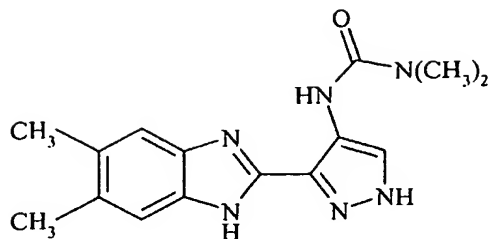
- By proceeding in a manner similar to Example 258(a) above but using 3-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-4,5,6,7-tetrahydro-1H-pyrazolo[4,3-c]pyridine [Example 251(d)] and diethylcarbamyl chloride there was prepared 3-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid diethylamide (103mg) as a white solid. MS:

407.17 (M+H)<sup>+</sup>. HPLC (METHOD E1): R<sub>T</sub> = 10.81 minutes.

- (r) 3-[3-(5,6-Dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-dimethyl-urea



-457-

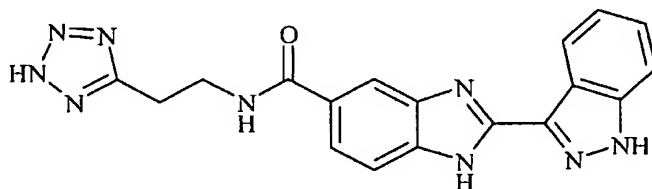


By proceeding in a manner similar to Example 258(p) above but using dimethylcarbamyl chloride there was prepared 3-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-dimethyl-urea. MS: 299 (M+H)<sup>+</sup>. HPLC (Method E1): R<sub>T</sub> = 8.24 minutes.

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**EXAMPLE 259**

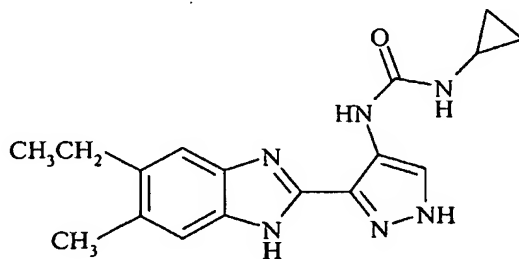
2-(1H-Indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid [2-(2H-tetrazol-5-yl)-ethyl]-amide



- A stirred solution of 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2-cyano-ethyl)-amide [150mg, Example 246(s)] and azidotributyltin (2ml) was heated at 95°C for 24 hours. The reaction was cooled to ambient temperature and stirred for 2 hours with acetonitrile (20ml), tetrahydrofuran (10ml) and acetic acid (20ml). The reaction mixture was washed with iso-hexane (6 x 80ml) and concentrated *in vacuo*. The residue was subjected to preparative HPLC to give 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid [2-(2H-tetrazol-5-yl)-ethyl]-amide (35.9mg) as a brown solid.
- LC-MS (Method L): R<sub>T</sub> = 9.80 minutes, 374.21 (M+H)<sup>+</sup>.

**EXAMPLE 260**

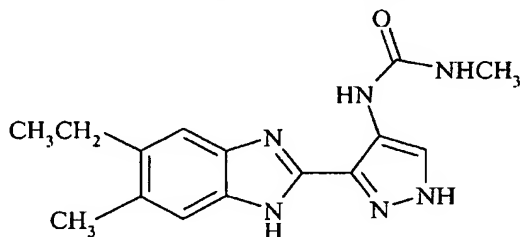
(a) 1-Cyclopropyl-3-[3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-urea



To a stirred solution of 3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-ylamine [250mg, Example 233(d)] in tetrahydrofuran (20ml) was added 1,1-carbonyldiimidazole (740mg) and the reaction heated at reflux for 60 hours. The reaction mixture was cooled to ambient temperature and the solvent removed *in vacuo*. The residue was added 2M cyclopropylamine in tetrahydrofuran (15ml).

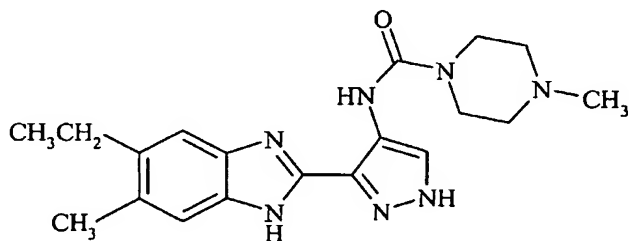
- 5 The reaction mixture was transferred to a pressure tube and heated at reflux for 48 hours. The reaction mixture was cooled to ambient temperature and partitioned between ethyl acetate and water. The aqueous layer was extracted three times with ethyl acetate and the combined organic extracts washed with brine, dried over magnesium sulfate, and concentrated. The residue was subjected to flash column chromatography on silica eluting with ethyl acetate/hexane (1:1 v/v) to 100% ethyl acetate to afford 1-cyclopropyl-3-[3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-urea (95mg) as a white solid. LC-MS (METHOD M):  $R_T = 9.40$  minutes, 325.32 (M+H)<sup>+</sup>.

(b) 1-[3-(5-Ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-methyl-urea



- 15 By proceeding in a manner similar to Example 260(a) above but using 2M methylamine in tetrahydrofuran there was prepared 1-[3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-methyl-urea (36mg) as a white solid. LC-MS (METHOD M):  $R_T = 7.08$  minutes, 299.34 (M+H)<sup>+</sup>.

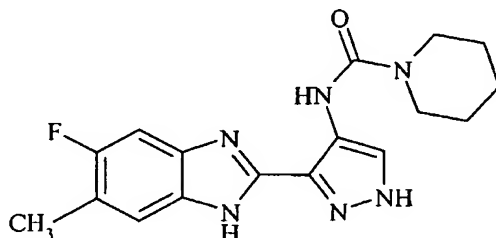
(c) 4-Methyl-piperazine-1-carboxylic acid [3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide



By proceeding in a manner similar to Example 260(a) above but using 2M 1-methylpiperazine in tetrahydrofuran there was prepared 4-methyl-piperazine-1-carboxylic acid [3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide (247mg) pared as a white solid. LC-MS (METHOD M):

- 25  $R_T = 5.21$  minutes, 368.32 (M+H)<sup>+</sup>.

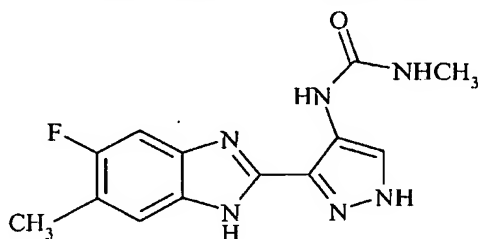
- (d) Piperidine-1-carboxylic acid [3-(5-fluoro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide



- 5 By proceeding in a manner similar to Example 260(a) above but using 3-(5-fluoro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-ylamine [Example 233(h)] and 2M piperidine in tetrahydrofuran there was prepared piperidine-1-carboxylic acid [3-(5-fluoro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide (140mg) as a white solid. LC-MS (METHOD L):  $R_T = 8.29$  minutes, 343.26 (M+H)<sup>+</sup>.

10

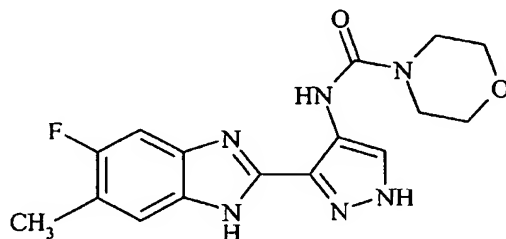
- (e) 1-[3-(5-Fluoro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-methyl-urea



By proceeding in a manner similar to Example 260(d) above but using 2M methylamine in tetrahydrofuran there was prepared 1-[3-(5-fluoro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-

- 15 3-methyl-urea (61mg) as a white solid. LC-MS (METHOD L):  $R_T = 4.85$  minutes, 289.26 (M+H)<sup>+</sup>.

- (f) Morpholine-4-carboxylic acid [3-(5-fluoro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide

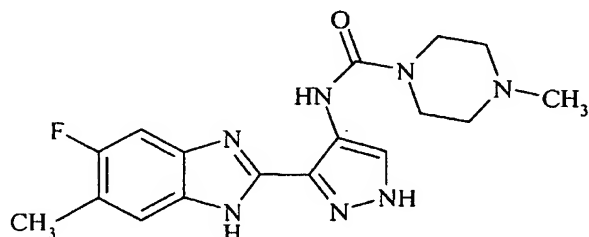


- 20 By proceeding in a manner similar to Example 260(d) above but using 2M morpholine in tetrahydrofuran there was prepared morpholine-4-carboxylic acid [3-(5-fluoro-6-methyl-1H-

benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide (49mg) as a white solid. LC-MS (METHOD L):  $R_T = 6.26$  minutes, 345.33 (M+H)<sup>+</sup>.

5

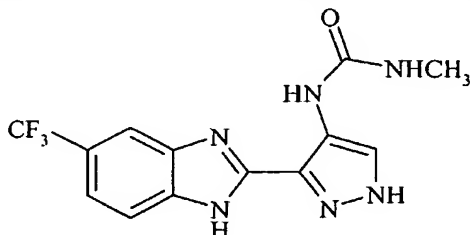
- (g) 4-Methyl-piperazine-1-carboxylic acid [3-(5-fluoro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide



By proceeding in a manner similar to Example 31(d) above but using 2M 1-methylpiperazine in tetrahydrofuran there was prepared 4-methyl-piperazine-1-carboxylic acid [3-(5-fluoro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide (58mg) as a white solid. LC-MS (METHOD P):  $R_T =$

10 7.72 minutes, 358.19 (M+H)<sup>+</sup>.

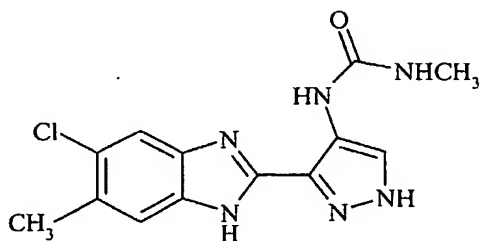
- (h) 1-Methyl-3-[3-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-urea



By proceeding in a manner similar to Example 260(a) above but using 3-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-ylamine [Example 233(j)] and 2M methylamine in tetrahydrofuran there was prepared 1-methyl-3-[3-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-urea (99mg) as a white solid. LC-MS (METHOD L):  $R_T = 6.51$  minutes, 325 (M+H)<sup>+</sup>.

15

- (i) 1-[3-(5-Chloro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-methyl-urea

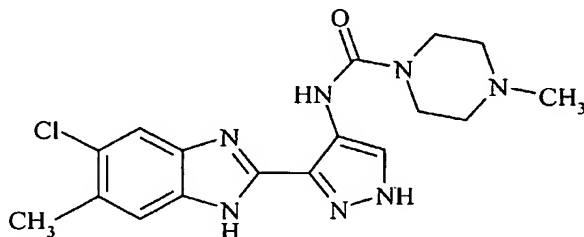


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By proceeding in a manner similar to Example 260(a) above but using 3-(5-chloro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-ylamine [Example 261] and 2M methylamine in tetrahydrofuran there was prepared 1-[3-(5-chloro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-methyl-urea (45mg) as a white solid. LC-MS (METHOD L):  $R_T = 5.85$  minutes, 305/307 (M+H)<sup>+</sup>.

5

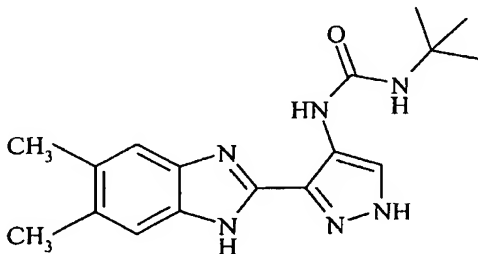
- (j) 4-Methyl-piperazine-1-carboxylic acid [3-(5-chloro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide



10

By proceeding in a manner similar to Example 260(i) above but using 2M 1-methylpiperazine in tetrahydrofuran there was prepared 4-methyl-piperazine-1-carboxylic acid [3-(5-chloro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide (60mg) as a pale yellow solid. LC-MS (METHOD M):  $R_T = 6.35$  minutes, 374 (M+H)<sup>+</sup>.

- (k) 1-tert-Butyl-3-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-urea

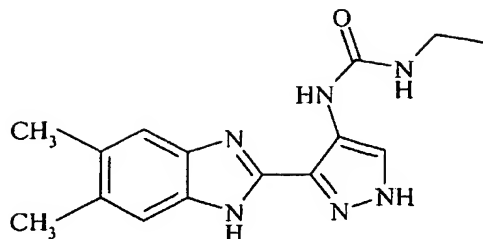


15

By proceeding in a manner similar to Example 260(a) above but using 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-ylamine [Example 233(c)] and *tert*-butylamine there was prepared 1-tert-butyl-3-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-urea (21mg) as a white solid. LC-MS (METHOD L):  $R_T = 5.38$  minutes, 327 (M+H)<sup>+</sup>.

20

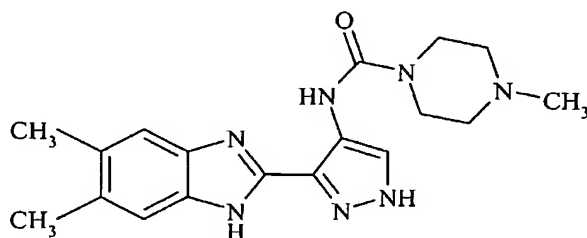
- (l) 1-[3-(5,6-Dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-ethyl-urea



By proceeding in a manner similar to Example 260(k) above but using 2M ethylamine in tetrahydrofuran there was prepared 1-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-ethyl-urea (39mg) as a white solid. LC-MS (METHOD L):  $R_T = 3.95$  minutes, 299 (M+H)<sup>+</sup>.

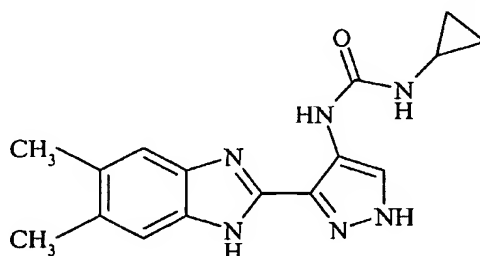
5

- (m) 4-Methyl-piperazine-1-carboxylic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide



- 10 By proceeding in a manner similar to Example 260(k) above but using 2M 1-methylpiperazine in tetrahydrofuran there was prepared 4-methyl-piperazine-1-carboxylic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide (113mg) as a white solid. MS: 354 (M+H)<sup>+</sup>. HPLC (METHOD E1):  $R_T = 10.21$  minutes.

- (n) 1-Cyclopropyl-3-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-urea

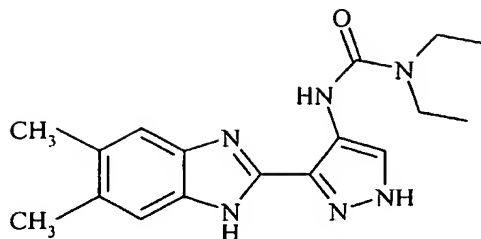


15

By proceeding in a manner similar to Example 260(k) above but using cyclopropylamine there was prepared 1-cyclopropyl-3-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-urea (80mg) as a white solid. MS: 311 (M+H)<sup>+</sup>. HPLC (METHOD E1):  $R_T = 10.36$  minutes.

- 20 (o) 3-[3-(5,6-Dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-diethyl-urea

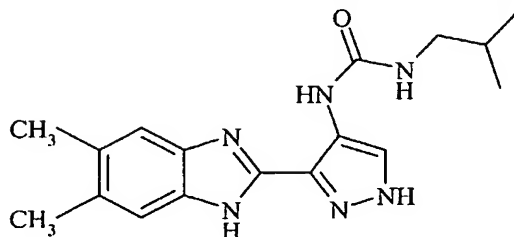
-463-



By proceeding in a manner similar to Example 260(k) above but using 2M diethylamine in tetrahydrofuran there was prepared 3-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-diethyl-urea (61mg) as a white solid. MS: 327 (M+H)<sup>+</sup>. HPLC (METHOD E1): R<sub>T</sub> = 11.36 minutes.

5

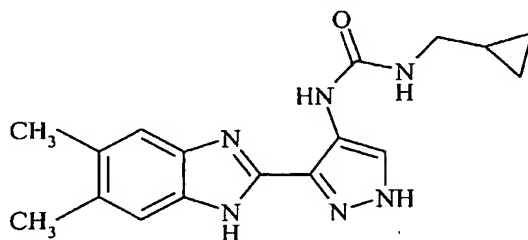
(p) 1-[3-(5,6-Dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-isobutyl-urea



By proceeding in a manner similar to Example 260(k) above but using 2M isobutylamine in tetrahydrofuran, there was prepared 1-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-isobutyl-urea (58mg) as a white solid. MS: 327 (M+H)<sup>+</sup>. HPLC (METHOD E1): R<sub>T</sub> = 10.95 minutes.

10

(q) 1-Cyclopropylmethyl-3-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-urea



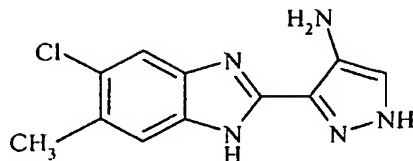
By proceeding in a manner similar to Example 260(k) above but using 2M (aminomethyl)cyclopropane in tetrahydrofuran, there was prepared 1-cyclopropylmethyl-3-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-urea (29mg) as a white solid. MS: 325 (M+H)<sup>+</sup>. HPLC (METHOD E1): R<sub>T</sub> = 10.63 minutes.

15

#### EXAMPLE 261

20 3-(5-Chloro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-ylamine

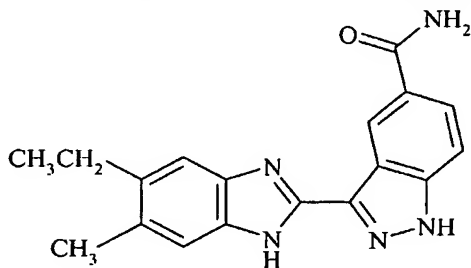
-464-



A stirred solution of 5-chloro-6-methyl-2-(4-nitro-1H-pyrazol-3-yl)-1H-benzimidazole [0.320g, Example 249(g)] and tin chloride (1.10g) in ethanol (5 ml) was heated in a Smith Creator microwave at 140°C for 10 minutes. The reaction mixture was basified using saturated sodium hydrogen carbonate solution to pH 8 and extracted with ethyl acetate. The organic layer was dried over magnesium sulfate and concentrated to give 3-(5-chloro-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-ylamine as a pale brown solid. LC-MS (METHOD B):  $R_T = 2.28$  minutes, 248.13 (M+H)<sup>+</sup>.

#### EXAMPLE 262

##### 10 3-(5-Ethyl-6-methyl-1H-benzimidazol-2-yl)-1H-indazole-5-carboxylic acid amide dihydrochloride

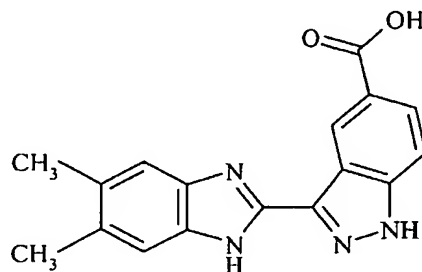


.2HCl

A stirred suspension of 3-(5-ethyl-6-methyl-1H-benzimidazol-2-yl)-1H-indazole-5-carbonitrile [100mg, Example 235(an)] in acetic acid (1ml) and concentrated hydrochloric acid (1ml) was heated at 80°C for 30 minutes and then at 100°C for 4 hours. The reaction was cooled to ambient temperature and stirred for 16 hours. The reaction was then heated at 80°C for 2.5 hours and then at 100°C for 2 hours. The reaction mixture was cooled to ambient temperature and neutralized with aqueous sodium carbonate solution. The resulting white precipitate was collected by filtration and the aqueous layer was extracted with ethyl acetate, combined with the precipitate and concentrated *in vacuo*. The residue was taken up in methanol, transferred to a solid phase cartridge containing MP-carbonate resin (100mg) and shaken for 16 hours. The reaction was then filtered, the resin washed with methanol and the combined organic layers concentrated *in vacuo*. The residue was triturated with diethyl ether, taken up in methanol and acidified with 4M hydrogen chloride in 1,4-dioxane. The solvent was removed *in vacuo* to give 3-(5-ethyl-6-methyl-1H-benzimidazol-2-yl)-1H-indazole-5-carboxylic acid amide dihydrochloride (58mg) as a pale brown solid. LC-MS (METHOD M):  $R_T = 9.40$  minutes,

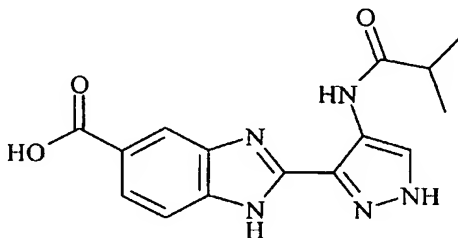
25 320(M+H)<sup>+</sup>.



**EXAMPLE 263****3-(5,6-Dimethyl-1H-benzoimidazol-2-yl)-1H-indazole-5-carboxylic acid**

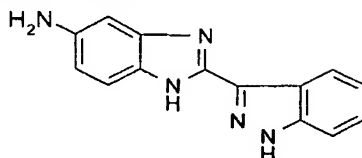
A stirred suspension of 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-indazole-5-carbonitrile dihydrochloride [200mg, Reference Example 6(aq)] in acetic acid/concentrated hydrochloric acid (4ml, 1:1 v/v) was heated at 100°C for 16 hours. The reaction mixture was cooled to ambient temperature and filtered. The precipitate was washed with water and dried *in vacuo* to give 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-indazole-5-carboxylic acid (195mg) as a white solid. LC-MS (METHOD B):  $R_T = 2.52$  minutes, 307 (M+H)<sup>+</sup>.

10

**EXAMPLE 264****2-(4-Isobutyrylamino-1H-pyrazol-3-yl)-1H-benzoimidazole-5-carboxylic acid**

To a stirred solution of 2-(4-amino-1H-pyrazol-3-yl)-1H-benzoimidazole-5-carboxylic acid methyl ester [200mg, Example 233(k)] in tetrahydrofuran (5ml) was added diisopropylethylamine (545μl) and isobutyryl chloride (327μl) dropwise and the reaction stirred for 30 minutes. The reaction mixture was concentrated *in vacuo* and the residue was taken up in 1M potassium hydroxide in tetrahydrofuran/methanol (1:3, v/v) (5ml) and stirred for 1 hour. The reaction mixture was concentrated *in vacuo* and the residue was taken up in 1M sodium hydroxide in water/methanol (5ml) and stirred for 1 hour. The solvent was removed *in vacuo* and the residue was partitioned between ethyl acetate and water and the layers separated. The aqueous layer was acidified to pH 3-4 with 5% citric acid solution, extracted with ethyl acetate and the organic layer washed with brine. The organic layer was then dried over magnesium sulfate, filtered and the filtrate concentrated *in vacuo* to give 2-(4-isobutyrylamino-1H-pyrazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (140mg) as a white solid. LC-MS (METHOD C):  $R_T = 2.87$  minutes, 313.33 (M+H)<sup>+</sup>.

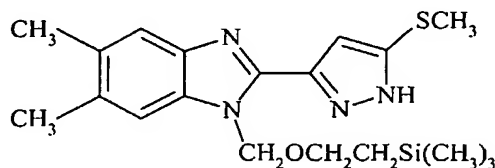
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EXAMPLE 2652-(1H-Indazol-3-yl)-3H-benzimidazol-5-amine

- 5 A stirred solution of 3-(5-nitro-1H-benzimidazol-2-yl)-1H-indazole [90.8 mg, Reference Example 233(as)] in methanol (1ml) was treated with tin chloride (616mg). The reaction was heated at reflux for 16 hours and then cooled to ambient temperature. The pH of the reaction mixture was adjusted to pH 8 by addition of aqueous sodium bicarbonate and then this mixture was extracted with ethyl acetate. The organic extracts were dried over magnesium sulfate and then evaporated to yield an oil. The crude product was subjected to flash column chromatography on silica eluting with ethyl acetate and 10% triethylamine to give 2-(1H-indazol-3-yl)-3H-benzimidazol-5-amine (826mg). MS: 250.31 (M+H)<sup>+</sup>, 248.31 (M-H)<sup>-</sup>. HPLC (Method B): R<sub>T</sub> = 2.03 minutes.

REFERENCE EXAMPLE 1

- 15 (a) 5,6-Dimethyl-2-(5-methylsulfanyl-1H-pyrazol-3-yl)-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazole



- A mixture of 1-[5,6-dimethyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazol-2-yl]-3,3-bis-methylsulfanyl-propenone [318mg, Reference Example 2(a)], hydrazine (2mL) and ethanol (12mL) was heated at reflux temperature for 1 hour. The reaction mixture was then cooled to room temperature, then stirred at room temperature overnight, then heated at 60°C for 2 hours, then heated at reflux temperature for 3 hours, then stood at room temperature for 3 days and then evaporated. The residue was dissolved in dichloromethane and this solution was washed with water plus a little brine to facilitate separation and the aqueous phase was washed with dichloromethane and then with ethyl acetate. The combined organics were dried over magnesium sulfate and then evaporated to give 5,6-dimethyl-2-(5-methylsulfanyl-1H-pyrazol-3-yl)-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazole (90mg) as a colourless solid.

(b) By proceeding in a similar manner to Reference Example 1(a) above but using 1-[6-chloro-5-methyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazol-2-yl]-3,3-bis-methylsulfanyl-propenone [Reference Example 2(b)] there was prepared 6-chloro-5-methyl-2-(5-methylsulfanyl-1H-pyrazol-3-yl)-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazole.

5

(c) By proceeding in a similar manner to Reference Example 1(a) above but using 1-[6-chloro-5-methyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazol-2-yl]-3,3-bis-ethylsulfanyl-propenone [Reference Example 2(c)] there was prepared 6-chloro-5-methyl-2-(5-ethylsulfanyl-1H-pyrazol-3-yl)-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazole

10

(d) By proceeding in a similar manner to Reference Example 1(a) above but using 3,3-bis-methylsulfanyl-1-[5-trifluoromethyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazol-2-yl]-propenone [Reference Example 2(d)] there was prepared 2-(5-methylsulfanyl-1H-pyrazol-3-yl)-5-trifluoromethyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazole

15

(e) By proceeding in a similar manner to Reference Example 1(a) above but using 3,3-bis-cyclopropylmethylsulfanyl-1-[5,6-dimethyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazol-2-yl]-propenone [Reference Example 2(e)] there was prepared 2-(5-cyclopropylmethylsulfanyl-1H-pyrazol-3-yl)-5,6-dimethyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazole.

20

(f) By proceeding in a similar manner to Reference Example 1(a) above but using 1-[5,6-dimethyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazol-2-yl]-3,3-bis-ethylsulfanyl propenone [Reference Example 2(f)] there was prepared 5,6-dimethyl-2-(5-ethylsulfanyl-1H-pyrazol-3-yl)-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazole.

25

(g) By proceeding in a similar manner to Reference Example 1(a) above but using 1-[5,6-dimethyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazol-2-yl]-3,3-bis-(pyridin-3-ylmethylsulfanyl)-propenone [Reference Example 2(g)] there was prepared 5,6-dimethyl-2-(5-(pyridin-3-yl)methylsulfanyl-1H-pyrazol-3-yl)-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazole.

30

(h) By proceeding in a similar manner to Reference Example 1(a) above but using 1-[5-fluoro-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazol-2-yl]-3,3-bis-methylsulfanyl-propenone [Reference Example 2(h)] there was prepared 5-fluoro-2-(5-methylsulfanyl-1H-pyrazol-3-yl)-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazole.

35

(i) By proceeding in a similar manner to Reference Example 1(a) above but using 1-[5,6-dimethyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzoimidazol-2-yl]-3,3-bis-phenethylsulfanyl-propenone [Reference Example 2(i)] there was prepared 5,6-dimethyl-2-(5-phenethylsulfanyl-1H-pyrazol-3-yl)-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzoimidazole.

5

(j) By proceeding in a similar manner to Reference Example 1(a) above but using 3,3-bis-methylsulfanyl-1-[4-methyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzoimidazol-2-yl]-propenone [Reference Example 2(k)] there was prepared 4-methyl-2-(5-methylsulfanyl-1H-pyrazol-3-yl)-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzoimidazole.

10

(k) By proceeding in a similar manner to Reference Example 1(a) above but using 3,3-bis-benzylsulfanyl-1-[5,6-dimethyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzoimidazol-2-yl]-propenone [Reference Example 2(o)] there was prepared 2-(5-benzylsulfanyl-1H-pyrazol-3-yl)-5,6-dimethyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzoimidazole.

15

(l) By proceeding in a similar manner to Reference Example 1(a) above but using 1-[6-chloro-5-methyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzoimidazol-2-yl]-3-methylsulfanyl-3-morpholin-1-yl-propenone [Reference Example 13] there was prepared 6-chloro-5-methyl-2-(5-morpholin-4-yl-1H-pyrazol-3-yl)-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzoimidazole.

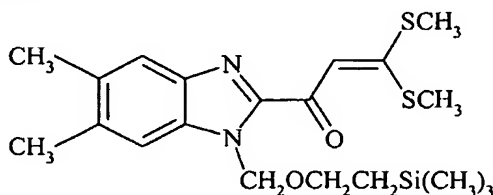
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(m) By proceeding in a similar manner to Reference Example 1(a) above but using 1-[5,6-dimethyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzoimidazol-2-yl]-3,3-bis-(thiophen-2-ylmethylsulfanyl)-propenone [Reference Example 2(s)] there was prepared 5,6-dimethyl-2-[5-(thiophen-2-ylmethylsulfanyl)-1H-pyrazol-3-yl]-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzoimidazole.

25

#### REFERENCE EXAMPLE 2

(a) 1-[5,6-Dimethyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzoimidazol-2-yl]-3,3-bis-methylsulfanyl-propenone



30 A stirred suspension of sodium *tert*-butoxide (350mg) in benzene (6mL), at -5°C, was treated with a solution of 1-[5,6-dimethyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzoimidazol-2-yl]-ethanone [240mg, Reference Example 3(a)] in benzene (5mL) followed by carbon disulfide (230μL). The

resulting orange solution was stirred for 1 hour at -5°C, then treated with methyl iodide (180µL), then allowed to warm to room temperature and then stirred at room temperature overnight. An orange precipitate was formed. The reaction mixture was poured into ice-water and this mixture was then extracted with dichloromethane. The combined organic extracts were washed with water, then dried over sodium sulfate and then evaporated to give 1-[5,6-dimethyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzoimidazol-2-yl]-3,3-bis-methylsulfanyl-propenone (318mg) as an orange oil which was used without further purification.

(b) By proceeding in a similar manner to Reference Example 2(a) above but using 1-[6-chloro-5-methyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzoimidazol-2-yl]-ethanone [Reference Example 3(b)] there was prepared 1-[6-chloro-5-methyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzoimidazol-2-yl]-3,3-bis-methylsulfanyl-propenone.

(c) By proceeding in a similar manner to Reference Example 2(a) above but using 1-[6-chloro-5-methyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzoimidazol-2-yl]-ethanone [Reference Example 3(b)] and ethyl iodide there was prepared 1-[6-chloro-5-methyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzoimidazol-2-yl]-3,3-bis-ethylsulfanyl-propenone.

(d) By proceeding in a similar manner to Reference Example 2(a) above but using 1-[5-trifluoromethyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzoimidazol-2-yl]-ethanone [Reference Example 3(c)] there was prepared 3,3-bis-methylsulfanyl-1-[5-trifluoromethyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzoimidazol-2-yl]-propenone.

(e) By proceeding in a similar manner to Reference Example 2(a) above but using bromomethylcyclopropane there was prepared 3,3-bis-cyclopropylmethylsulfanyl-1-[5,6-dimethyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzoimidazol-2-yl]-propenone.

(f) By proceeding in a similar manner to Reference Example 2(a) above but using ethyl iodide there was prepared 1-[5,6-dimethyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzoimidazol-2-yl]-3,3-bis-ethylsulfanyl-propenone.

(g) By proceeding in a similar manner to Reference Example 2(a) above but using 3-picoly chloride there was prepared 1-[5,6-dimethyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzoimidazol-2-yl]-3,3-bis-(pyridin-3-yl)methylsulfanyl-propenone.

- (h) By proceeding in a similar manner to Reference Example 2(a) above but using 1-[5-fluoro-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazol-2-yl]-ethanone [Reference Example 3(d)] there was prepared 1-[5-fluoro-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazol-2-yl]-3,3-bis-methylsulfanyl-propenone.
- 5
- (i) By proceeding in a similar manner to Reference Example 2(a) above but using phenethyl bromide there was prepared 1-[5,6-dimethyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazol-2-yl]-3,3-bis-phenethylsulfanyl-propenone.
- 10
- (j) By proceeding in a similar manner to Reference Example 2(a) above but using 1-[5-methoxy-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazol-2-yl]-ethanone [Reference Example 4(g)] and ethyl bromide there was prepared 3,3-bis-ethylsulfanyl-1-[5-methoxy-2-(trimethylsilyl)ethoxymethyl]-1H-benzimidazol-2-yl]-propenone.
- 15
- (k) By proceeding in a similar manner to Reference Example 2(a) above but using 1-[4-methyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazol-2-yl]-ethanone [Reference Example 3(e)] there was prepared 3,3-bis-methylsulfanyl-1-[4-methyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazol-2-yl]-propenone.
- 20
- (l) By proceeding in a similar manner to Reference Example 2(a) above but using 1-[5-methyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazol-2-yl]-pentan-1-one [Reference Example 3(f)] there was prepared 2-(bis-methylsulfanyl-methylene)-1-(5-methyl-1H-benzimidazol-2-yl)-pentan-1-one.
- 25
- (m) By proceeding in a similar manner to Reference Example 2(a) above but using 1-[5-methyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazol-2-yl]-pentan-1-one [Reference Example 3(f)] and 4-methoxybenzyl chloride there was prepared 2-[bis-(4-methoxy-benzylsulfanyl)-methylene]-1-(5-methyl-1H-benzimidazol-2-yl)-pentan-1-one.
- 30
- (n) By proceeding in a similar manner to Reference Example 2(a) above but using 3-methyl-1-[5-methyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazol-2-yl]-butan-1-one [Reference Example 3(g)] and benzyl chloride there was prepared 2-(bis-benzylsulfanyl-methylene)-3-methyl-1-[5-methyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazol-2-yl]-butan-1-one.

(o) By proceeding in a similar manner to Reference Example 2(a) above but using benzyl chloride there was prepared 3,3-bis-benzylsulfanyl-1-[5,6-dimethyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzoimidazol-2-yl]-propanone.

5 (p) By proceeding in a similar manner to Reference Example 2(a) above but using 1-[1-(2-trimethylsilyl-ethoxymethyl)-1H-benzoimidazol-2-yl]-ethanone [Reference Example 4(h)] with tetrahydrofuran as the solvent and carrying out the reaction at room temperature and then  
subjecting the reaction product to flash chromatography on silica under gradient elution conditions (20  
to 33% ethyl acetate in pentane) there was prepared 3,3-bis-methanesulfanyl-1-[1-(2-trimethylsilyl-ethoxymethyl)-1H-benzoimidazol-2-yl]-propanone as an oil which slowly solidified on standing at  
10 room temperature.

(q) By proceeding in a similar manner to Reference Example 2(a) above but using 1-[6-chloro-5-methyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzoimidazol-2-yl]-ethanone [Reference Example  
15 3(b)] and methyl iodide there was prepared 1-[6-chloro-5-methyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzoimidazol-2-yl]-3,3-bis-methylsulfanyl-propanone.

(r) By proceeding in a similar manner to Reference Example 2(a) above but using 1-[5-methoxy-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzoimidazol-2-yl]-propan-1-one [Reference Example 4(i)] and  
20 methyl iodide there was prepared 1-[5-methoxy-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzoimidazol-2-yl]-2-methyl-3-(bis-methanesulfanyl)-1-propanone.

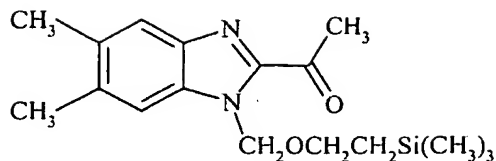
(s) By proceeding in a similar manner to Reference Example 2(a) above but using of 1-[5,6-dimethyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzoimidazol-2-yl]-ethanone [Reference  
25 Example 3(a)] and 2-chloromethylthiophene [Reference Example 14]) there was prepared 1-[5,6-dimethyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzoimidazol-2-yl]-3,3-bis-(thiophen-2-ylmethylsulfanyl)-propanone.

(t) By proceeding in a similar manner to Reference Example 2(a) above but using 1-[5-methyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzoimidazol-2-yl]-propan-1-one [Reference Example 3(h)]  
30 there was prepared 1-[5-methyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzoimidazol-2-yl]-2-methyl-3-(bis-methanesulfanyl)-1-propanone.

### REFERENCE EXAMPLE 3

35 (a) 1-[5,6-Dimethyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzoimidazol-2-yl]-ethanone

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A solution of 5,6-dimethyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazole [5.01g, Reference Example 4(a)] in dry tetrahydrofuran (55mL), at -78°C, was treated with a solution of lithium diisopropylamide in a mixture of tetrahydrofuran and heptane (11.9mL, 2M) over 10 minutes. The mixture was stirred for 15 minutes then treated dropwise with dimethylacetamide (2.15mL) over 10 minutes. After stirring at -78°C for a further 30 minutes the reaction mixture was poured into ice (50g) and then left until all the ice had melted. This mixture was extracted with dichloromethane and the extracts were washed with brine, then with water, then dried over magnesium sulfate and then evaporated. The residual orange oil (5.91g) was subjected to column chromatography on silica eluting with a mixture of petroleum ether and ethyl acetate (4:1, v/v) to give 1-[5,6-dimethyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazol-2-yl]-ethanone (3.93g) as a yellow crystalline solid.

(b) By proceeding in a similar manner to Reference Example 3(a) above but using 6-chloro-5-methyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazole [Reference Example 4(b)] there was prepared 1-[6-chloro-5-methyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazol-2-yl]-ethanone.

(c) By proceeding in a similar manner to Reference Example 3(a) above but using 5-trifluoromethyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazole [Reference Example 4(c)] there was prepared 1-[5-trifluoromethyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazol-2-yl]-ethanone.

(d) By proceeding in a similar manner to Reference Example 3(a) above but using 5-fluoro-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazole [Reference Example 4(d)] there was prepared 1-[5-fluoro-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazol-2-yl]-ethanone.

(e) By proceeding in a similar manner to Reference Example 3(a) above but using 4-methyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazole [Reference Example 4(e)] there was prepared 1-[4-methyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazol-2-yl]-ethanone.

(f) By proceeding in a similar manner to Reference Example 3(a) above but using 5-methyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazole [Reference Example 4(f)] and dimethylvaleramide [Reference Example 8(a)] there was prepared 1-[5-methyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazol-2-yl]-pentan-1-one.



(g) By proceeding in a similar manner to Reference Example 3(a) above but using 5-methyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazole [Reference Example 4(f)] and

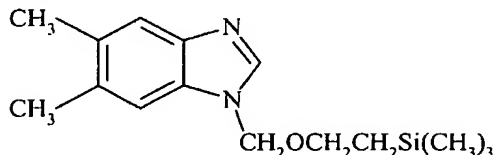
dimethylisovalerylamide [Reference Example 8(b)] there was prepared 3-methyl-1-[5-methyl-1-(2-trimethylsilylanyl-ethoxymethyl))-1H-benzimidazol-2-yl]-butan-1-one.

(h) By proceeding in a similar manner to Reference Example 3(a) above but using 5-methyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazole [Reference Example 4(f)] and

dimethylpropionamide there was prepared 1-[5-methyl-1-(2-trimethylsilyl)ethoxymethyl]-1H-benzoimidazol-2-yl]-propan-1-one.

#### REFERENCE EXAMPLE 4

(a) 5,6-Dimethyl-1-(2-trimethylsilanyl-ethoxymethyl)-1H-benzimidazole



A stirred mixture of sodium hydride (1.08g) in dimethylformamide (80mL) was treated with a solution of 5,6-dimethyl-1H-benzoimidazole (4.95g) in dimethylformamide (50mL) at room temperature over 10 minutes. After stirring for a further 1 hour the mixture was then treated with 2-(trimethylsilyl)ethoxymethyl chloride (6.4mL) over 15 minutes and then stirring was continued for 18 hours. The reaction mixture was treated with methanol (15mL) and water (1mL) and then evaporated. The residue was treated with water (50mL) and this mixture was then extracted twice with diethyl ether (80mL then 50mL). The combined extracts were washed three times with water (50mL), then dried over magnesium sulfate and then evaporated. The residual brown oil (10.3g) was purified by Flashmaster using mixtures of ethyl acetate in hexane (20% to 80%) at 40ml/minute to give 5,6-dimethyl-1-(2-(trimethylsilyl)ethoxymethyl)-1H-benzoimidazole (7.54g) as an orange oil.

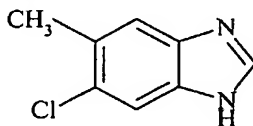
(b) By proceeding in a similar manner to Reference Example 4(a) above but using 6-chloro-5-methyl-1H-benzimidazole [Reference Example 5(a)] there was prepared 6-chloro-5-methyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazole.

(c) By proceeding in a similar manner to Reference Example 4(a) above but using 5-trifluoromethyl-1H-benzimidazole [Reference Example 5(b)] there was prepared 5-trifluoromethyl-1-(2-trimethylsilanyl-ethoxymethyl)-1H-benzimidazole.

- (d) By proceeding in a similar manner to Reference Example 4(a) above but using 5-fluoro-1H-benzimidazole [Reference Example 5(c)] there was prepared 5-fluoro-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazole.
- 5 (e) By proceeding in a similar manner to Reference Example 4(a) above but using 4-methyl-1H-benzimidazole [Reference Example 5(d)] there was prepared 4-methyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazole.
- (f) By proceeding in a similar manner to Reference Example 4(a) above but using 5-methyl-1H-benzimidazole there was prepared 5-methyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazole.
- 10 (g) By proceeding in a similar manner to Reference Example 4(a) above but using 1-(5-methoxy-1H-benzimidazol-2-yl)-ethanone [Reference Example 6(a)] there was prepared 1-[5-methoxy-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazol-2-yl]-ethanone.
- 15 (h) By proceeding in a similar manner to Reference Example 4(a) above but using (1H-benzimidazol-2-yl)-1-ethanone and carrying out the reaction in tetrahydrofuran there was prepared 1-[1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazol-2-yl]-ethanone as a colourless oil.
- 20 (i) By proceeding in a similar manner to Reference Example 4(a) above but using 1-(5-methoxy-1H-benzimidazol-2-yl)-propan-1-one [Reference Example 6(b)] there was prepared 1-[5-methoxy-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazol-2-yl]-propan-1-one

#### REFERENCE EXAMPLE 5

- 25 (a) 6-chloro-5-methyl-1H-benzimidazole



- A solution of 5-chloro-4-methyl-1,2-phenylenediamine (7.8g) in a mixture of formic acid (35mL) and hydrochloric acid (300mL) was heated at 50°C for 3 hours then treated with ammonium hydroxide solution until the solution was basic. The reaction mixture was then extracted with dichloromethane.
- 30 The extracts were evaporated to give 6-chloro-5-methyl-1H-benzimidazole (7g).

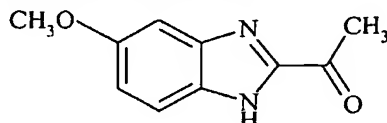
- (b) By proceeding in a similar manner to Reference Example 5(a) above but using 4-trifluoromethyl-1,2-phenylenediamine there was prepared 5-trifluoromethyl-1H-benzimidazole.

(c) By proceeding in a similar manner to Reference Example 5(a) above but using 4-fluoro-*o*-phenylenediamine there was prepared 5-fluoro-1H-benzoimidazole.

(d) By proceeding in a similar manner to Reference Example 5(a) above but using  
5 2,3-diaminotoluene there was prepared 4-methyl-1H-benzoimidazole.

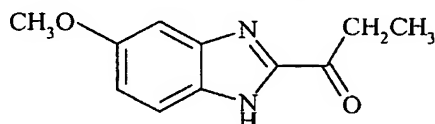
#### REFERENCE EXAMPLE 6

(a) 1-(5-Methoxy-1H-benzoimidazol-2-yl)-ethanone



10 A stirred mixture of 1-(5-methoxy-1H-benzoimidazole)-1-ethanol [5.14g, Reference Example 7(a)] and manganese dioxide (9g) in chloroform (80mL) was heated at 60°C for 18 hours, then cooled to room temperature and then filtered. The filtrate was evaporated to give 1-(5-methoxy-1H-benzoimidazol-2-yl)-ethanone (4.28g).

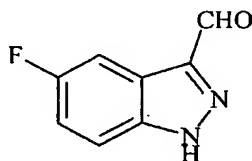
15 (b) 1-(5-Methoxy-1H-benzoimidazol-2-yl)-propan-1-one



By proceeding in a similar manner to Reference Example 6(a) above but using 1-(5-methoxy-1H-benzoimidazole)-1-propanol [Reference Example 7(b)] there was prepared 1-(5-methoxy-1H-benzoimidazol-2-yl)-propan-1-one.

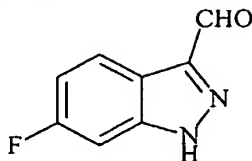
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(c) 5-Fluoro-1H-indazole-3-carbaldehyde

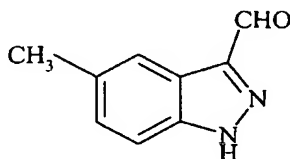


By proceeding in a similar manner to Reference Example 6(a) above but using (5-fluoro-1H-indazol-3-yl)-methanol [Reference Example 25(a)] with acetone as the solvent, a reaction temperature of 55°C  
25 and subjecting the reaction product to flash column chromatography on silica eluting with a mixture of 40/60 petrol and ethyl acetate (1:1 v/v) there was prepared 5-fluoro-1H-indazole-3-carbaldehyde as a light brown solid. LC-MS (METHOD B):  $R_T = 2.74$  minutes, 165 (M+H)<sup>+</sup>.

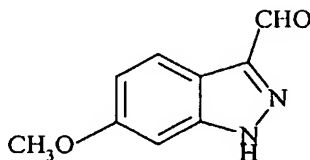
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(d) 6-Fluoro-1H-indazole-3-carbaldehyde

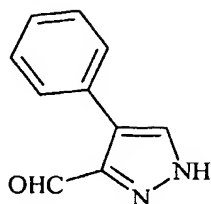
By proceeding in a manner similar to Reference Example 6(a) above but using (6-fluoro-1H-indazol-3-yl)-methanol [Reference Example 25(b)] with acetone as the solvent, a reaction temperature of 55°C and subjecting the reaction product to flash column chromatography on silica eluting with a mixture of 40/60 petrol and ethyl acetate (1:1 v/v) there was prepared 6-fluoro-1H-indazole-3-carbaldehyde as a light brown solid. LC-MS (METHOD B):  $R_T = 2.74$  minutes, 165 (M+H)<sup>+</sup>.

(e) 5-Methyl-1H-indazole-3-carbaldehyde

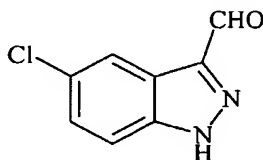
By proceeding in a manner similar to Reference Example 6(a) above but using (5-methyl-1H-indazol-3-yl)-methanol [Reference Example 25(c)] with dichloromethane as solvent, a reaction temperature of 40°C and subjecting the reaction product to flash column chromatography on silica eluting with a mixture of hexane and ethyl acetate (1:1, v/v) there was prepared 5-methyl-1H-indazole-3-carbaldehyde as a pale brown solid. LC-MS (METHOD B):  $R_T = 2.79$  minutes, 161 (M+H)<sup>+</sup>.

(f) 6-Methoxy-1H-indazole-3-carbaldehyde

By proceeding in a manner similar to Reference Example 6(a) above but using (6-methoxy-1H-indazol-3-yl)-methanol [Reference Example 25(e)] with acetone as the solvent, a reaction temperature of 55°C and subjecting the reaction product to flash column chromatography on silica eluting with a mixture of 40/60 petrol and ethyl acetate (1:1 v/v) there was prepared 6-methoxy-1H-indazole-3-carbaldehyde as a light brown solid. LC-MS (METHOD B):  $R_T = 2.76$  minutes, 177 (M+H)<sup>+</sup>.

(g) 4-Phenyl-1H-pyrazole-3-carbaldehyde

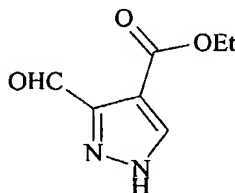
By proceeding in a similar manner to Reference Example 6(a) above but using (4-phenyl-1H-pyrazol-3-yl)-methanol [Reference Example 25(f)] with acetone as the solvent, a reaction temperature of 60°C for 2 hours, and subjecting the reaction product to flash column chromatography on silica eluting with a mixture of dichloromethane and methanol (49:1, v/v) there was prepared 4-phenyl-1H-pyrazole-3-carbaldehyde as a white solid. LC-MS (METHOD B):  $R_T = 2.76$  minutes; 213 (M+H)<sup>+</sup>.

(h) 5-Chloro-1H-indazole-3-carbaldehyde

10

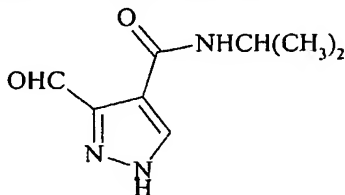
By proceeding in a similar manner to Reference Example 6(a) above but using (5-chloro-1H-indazol-3-yl)-methanol [Reference Example 25(d)] with a mixture of dichloromethane and tetrahydrofuran as solvent, heating at reflux temperature and subjecting the reaction product to flash column chromatography on silica eluting with a mixture of hexane and ethyl acetate (1:1, v/v) there was prepared 5-chloro-1H-indazole-3-carbaldehyde as a pale brown solid. LC-MS (METHOD B):  $R_T = 2.89$  minutes, 181 (M+H)<sup>+</sup>.

15

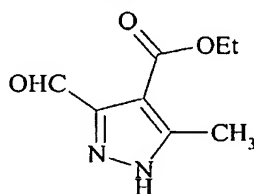
(i) 3-Formyl-pyrazole-4-carboxylic acid ethyl ester

20

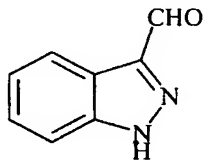
By proceeding in a manner similar to Reference Example 6(a) above but using 3-hydroxymethyl-1H-pyrazole-4-carboxylic acid ethyl ester [Reference Example 41(a)] there was prepared 3-formyl-pyrazole-4-carboxylic acid ethyl ester as a brown solid. LC-MS (METHOD B):  $R_T = 2.65$  minutes; 169 (M+H)<sup>+</sup>.

(j) 3-Formyl-pyrazole-4-carboxylic acid isopropylamide

By proceeding in a manner similar to Reference Example 6(a) above but using 3-hydroxymethyl-1H-pyrazole-4-carboxylic acid isopropylamide [Reference Example 41(b)] there was prepared 3-formyl-pyrazole-4-carboxylic acid isopropylamide as a waxy orange solid. LC-MS (METHOD B):  $R_T = 2.73$  minutes; 182 (M+H)<sup>+</sup>.

(k) 3-Formyl-5-methyl-pyrazole-4-carboxylic acid ethyl ester

By proceeding in a manner similar to Reference Example 6(a) above but using 3-hydroxymethyl-5-methyl-1H-pyrazole-4-carboxylic acid ethyl ester [Reference Example 41(c)] there was prepared 3-formyl-5-methyl-pyrazole-4-carboxylic acid ethyl ester as a white solid. LC-MS (METHOD B):  $R_T = 2.80$  minutes; 183 (M+H)<sup>+</sup>.

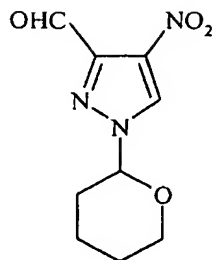
15 (l) 1H-indazole-3-carbaldehyde

By proceeding in a manner similar to Reference Example 6(a) above but using (1H-indazol-3-yl)-methanol [Reference Example 25(g)] with acetone as the solvent and carrying out the reaction at reflux temperature for 16 hours there was prepared 1H-indazole-3-carbaldehyde as a yellow solid.

LC-MS [METHOD B];  $R_T = 2.63$  minutes; 147.26 (M+H)<sup>+</sup>; 145.26 (M-H)<sup>-</sup>.

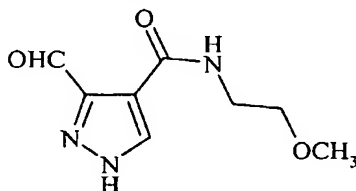
(m) 4-Nitro-1-(tetrahydro-pyran-2-yl)-1H-pyrazole-3-carbaldehyde

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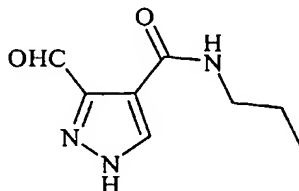
By proceeding in a manner similar to Reference Example 6(a) above but (i) using [4-nitro-1-(tetrahydro-pyran-2-yl)-1H-pyrazol-3-yl]-methanol (663mg, Reference Example 53) and manganese (IV) oxide (2.54g) with acetone as the solvent, (ii) carrying out the reaction at 65°C for 2 hours and (iii) subjecting the reaction product to flash silica chromatography eluting with a mixture of pentane and ethyl acetate (70:30, v/v), there was prepared 4-nitro-1-(tetrahydro-pyran-2-yl)-1H-pyrazole-3-carbaldehyde (191mg) as a pale yellow oil. LC-MS (Method H):  $R_T = 2.19$  minutes, 248.24 (M+H+Na)<sup>+</sup>.

10 (n) 3-Formyl-1H-pyrazole-4-carboxylic acid (2-methoxy-ethyl)-amide

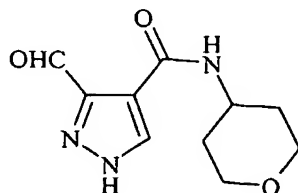


By proceeding in a manner similar to Reference Example 6(a) above but using 3-hydroxymethyl-1H-pyrazole-4-carboxylic acid (2-methoxy-ethyl)-amide [Reference Example 41(d)] there was prepared 3-formyl-1H-pyrazole-4-carboxylic acid (2-methoxy-ethyl)-amide (325mg) as a yellow oil. LC-MS (METHOD B):  $R_T = 2.13$  minutes, 198 (M+H)<sup>+</sup>.

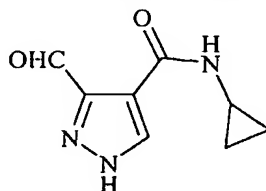
(o) 3-Formyl-1H-pyrazole-4-carboxylic acid propylamide



By proceeding in a manner similar to Reference Example 6(a) above but using 3-hydroxymethyl-1H-pyrazole-4-carboxylic acid propylamide [Reference Example 41(e)] there was prepared 3-formyl-1H-pyrazole-4-carboxylic acid propylamide (414mg) as an orange oil. LC-MS (METHOD B):  $R_T = 2.42$  minutes, 182 (M+H)<sup>+</sup>.

(p) 3-Formyl-1H-pyrazole-4-carboxylic acid (tetrahydro-pyran-4-yl)-amide

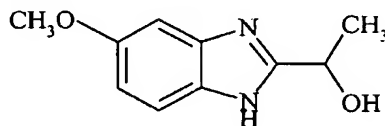
By proceeding in a manner similar to Reference Example 6(a) above but using 3-hydroxymethyl-1H-pyrazole-4-carboxylic acid (tetrahydro-pyran-4-yl)-amide [Reference Example 41(f)] there was prepared 3-formyl-1H-pyrazole-4-carboxylic acid (tetrahydro-pyran-4-yl)-amide (400mg) as a brown oil. LC-MS (METHOD N):  $R_T = 2.34$  minutes, 224.31 (M+H)<sup>+</sup>.

(q) 3-Formyl-1H-pyrazole-4-carboxylic acid cyclopropylamide

10

By proceeding in a manner similar to Reference Example 6(a) above but using 3-hydroxymethyl-1H-pyrazole-4-carboxylic acid cyclopropylamide [Reference Example 41(f)] there was prepared 3-formyl-1H-pyrazole-4-carboxylic acid cyclopropylamide (125mg) as a yellow oil. LC-MS (METHOD H):  $R_T = 1.87$  minutes, 178.31 (M-H)<sup>-</sup>.

15

REFERENCE EXAMPLE 7(a) 1-(5-Methoxy-1H-benzoimidazol-2-yl)-ethanol

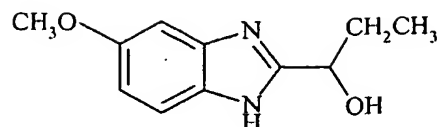
A mixture of 4-methoxy-phenylenediamine dihydrochloride (10g), sodium L-lactate (10g) and hydrochloric acid (60mL, 4M) was heated at 70°C for 48 hours. The reaction mixture was cooled to room temperature, then treated with ammonium hydroxide. The resulting precipitate was filtered and dried to give 1-(5-methoxy-1H-benzoimidazol-2-yl)-ethanol (5.14g).

(b) 1-(5-Methoxy-1-benzoimidazole)-1-propanol

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By proceeding in a similar manner to Reference Example 7(a) above but using 2-hydroxybutyric acid there was prepared 1-(5-methoxy-1-benzimidazole)-1-propanol.

5

REFERENCE EXAMPLE 8(a) Dimethylvaleramide

A solution of dimethylamine hydrochloride (6.76g) and triethylamine (30mL) in dichloromethane (100mL), under nitrogen and at 0°C was treated dropwise with valeryl chloride (10g). After stirring at room temperature overnight the reaction mixture was treated with hydrochloric acid (2N) and

10 dichloromethane. The organic phase was separated, dried over magnesium sulfate and then evaporated to give dimethylvaleramide as a clear oil.

(b) By proceeding in a similar manner to Reference Example 8(a) above but using isovaleryl chloride there was prepared dimethylisovalerylamide.

15

REFERENCE EXAMPLE 92,3-Diaminopyrazine

Liquid ammonia (50mL) was introduced into a pressure reaction vessel containing a small lump of ice. To this was added copper bronze (1.17g), copper (II) iodide (0.224g) and 2,3-dichloropyrazine (4g).

20 The sealed reaction vessel was heated at 170°C for 48 hours, then cooled to ambient temperature and then vented. The reaction mixture was treated with water (75mL) and this mixture was extracted four times with diethyl ether (400mL). The combined extracts were evaporated to give 2,3-diaminopyrazine as a white solid (0.3g). The aqueous layer was continuously extracted with diethyl ether for 18 hours to yield a further quantity of 2,3-diaminopyrazine (1.24g). <sup>1</sup>H-NMR [(CD<sub>3</sub>)<sub>2</sub>SO]: δ 5.87 (s, 4H), 7.15 (s,

25 2H).

REFERENCE EXAMPLE 101H-Pyrazole-3-carbaldehyde

(i) Dry dimethylformamide (77.6mL) was stirred at 80°C while cyanuric chloride (26.6g) was added

30 in portions, whilst keeping the reaction temperature between 80 and 110°C. The reaction mixture was stirred at 100°C for another 30 minutes then cooled and then allowed to stand at room temperature overnight. The reaction mixture was filtered to give dimethylvinylamine.

(ii) The dimethylvinylamine from (i) was added to dry methanol (260mL) and the mixture was then treated with pyruvic aldehyde dimethylacetal (51mL), followed by a solution of sodium methoxide in methanol (30%, 81mL), then stirred for 2 hours at ambient temperature, then heated at reflux temperature for another hour, then cooled and then filtered. The filtrate was evaporated to give

5 1,1-dimethoxy-but-3-en-2-one as a brown oil (96.8g).

(iii) A stirred solution of 1,1-dimethoxy-but-3-en-2-one in water (300mL) was treated dropwise with hydrazine hydrate (21 mL). After standing at room temperature overnight the reaction mixture was treated with sodium chloride (108g) and the mixture was then extracted with methyl-t-butylether (200mL then 100mL). The combined extracts were dried with magnesium sulfate and then evaporated to give 1H-pyrazol-3-carbaldehyde dimethyl acetal as a light brown oil (18.47g).

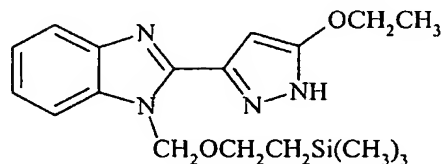
10 to give 1H-pyrazol-3-carbaldehyde dimethyl acetal as a light brown oil (18.47g).

(iv) A solution of 1H-pyrazol-3-carbaldehyde dimethyl acetal in water (85mL) was treated with glacial acetic acid (3.7mL). After two days the mixture was filtered to give 1H-pyrazole-3-carbaldehyde (1.3g) as a light brown solid.

15

#### REFERENCE EXAMPLE 11

2-(5-Ethoxy-1H-pyrazol-3-yl)-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazole

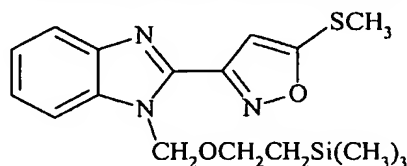


Sodium hydride (0.1g) was added to ethanol (5mL) and the mixture was stirred for ten minutes, then treated with 3,3-bis- methanesulfanyl-1-[1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazol-2-yl]-propanone [0.5g, Reference Example 2(p)] and then heated at reflux temperature for six hours. The reaction mixture was cooled, then treated with hydrazine hydrate (1.27mmol) and then heated at reflux temperature for four hours. The mixture was then evaporated and the residue was triturated with water and filtered. The solid was subjected to chromatography on silica gel eluting with ethyl acetate to give 2-(5-ethoxy-1H-pyrazol-3-yl)-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzimidazole as a yellow oil.

25

#### REFERENCE EXAMPLE 12

2-(5-Methylsulfanyl-isoxazol-3-yl)-1-(trimethylsilyl-ethoxymethyl)1H-benzimidazole



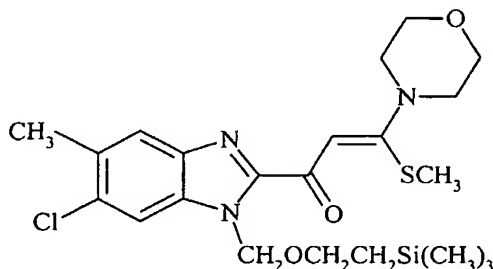
Hydroxylamine hydrochloride (168mg) was added to a solution of sodium methoxide in methanol

30 [prepared by the addition of sodium hydride (122mg) to methanol (5mL)]. The mixture was stirred for

ten minutes, then treated with 3,3-bis-methanesulfanyl-1-[1-(2-trimethylsilyl-ethoxymethyl)-1H-benzoimidazol-2-yl]-propenone [500mg, Reference Example 2(p)], then heated at reflux for six hours, then cooled and then evaporated. The residue was taken up in water and the aqueous mixture was extracted with ethyl acetate. The extracts were dried and evaporated. The residue was subjected to chromatography on silica eluting with methylene chloride to give 2-(5-methylsulfanyl-isoxazol-3-yl)-1-(trimethylsilyl-ethoxymethyl)-1H-benzoimidazole (0.16 g) as a colourless oil.

#### REFERENCE EXAMPLE 13

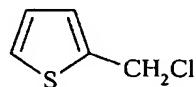
1-[6-Chloro-5-methyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzoimidazol-2-yl]- 3-methylsulfanyl-3-morpholin-1-yl-propenone



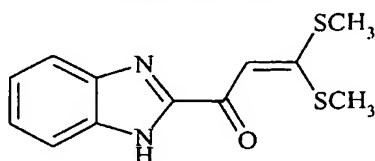
A solution of 1-[6-chloro-5-methyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzoimidazol-2-yl]- 3,3-bis-methanesulfanyl-propenone [800mg, Reference Example 2(q)] in morpholine (3mL) was heated at 95°C for 2 hours and then evaporated to give 1-[6-chloro-5-methyl-1-(2-trimethylsilyl-ethoxymethyl)-1H-benzoimidazol-2-yl]- 3-methylsulfanyl-3-morpholin-1-yl-propenone.

#### REFERENCE EXAMPLE 14

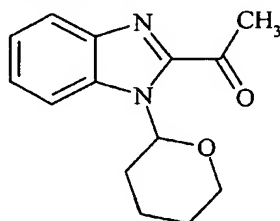
2-Chloromethyl-thiophene



To a three-necked flask fitted with stirrer bar, pressure equalizing dropping funnel and inlet/outlet adapter was added thiophene (10mL) and aqueous hydrochloric acid (5.5mL). Hydrogen chloride gas [generated by dropping sulfuric acid (30mL) onto dry sodium chloride (50 g)] was bubbled through the reaction mixture with vigorous stirring at 0°C. This mixture was then treated dropwise with formaldehyde solution (37%, 12.5mL) and stirring was continued for 45 minutes. The phases were separated and the aqueous phase was extracted three times with diethyl ether (10mL). The organic phases were then washed twice with water (10mL), then twice with saturated sodium hydrogen carbonate (10mL), then dried over magnesium sulfate and then evaporated. The residue was distilled at 20 mmHg using a heat gun to give 2-chloromethyl-thiophene which was used immediately without further purification.

REFERENCE EXAMPLE 15Bis(methylthio)-3,3-(benzoimidazol-2-yl)-1-prop-2-en-2-one

- 5 A mixture of sodium hydride (19.2g) and toluene (400mL), at 80°C, was treated portionwise with tertiary-butanol (30.8g). After 2 hours the reaction mixture was cooled to room temperature and treated dropwise with a mixture of dimethylformamide (40mL), carbon disulfide (12mL) and 2-acetyl-1-(tetrahydropyran-2-yl)-benzoimidazole (51g, Reference Example 16) over 90 minutes. After addition the red reaction mixture was stirred at 80°C for 30 minutes, then cooled to room temperature and then
- 10 treated with methyl iodide (50mL). This mixture was stirred at 80°C for 30 minutes when a precipitate started to form. The reaction mixture was cooled to room temperature and then filtered. The filtrate was concentrated to give a viscous red oil, which was dissolved in methanol (300mL). This solution was treated with p-toluenesulfonic acid (2g) and water (4mL), then heated at reflux temperature for 13 hours and then cooled in an ice-bath. The resulting solid was filtered and then washed with isopropyl
- 15 ether to give bis(methylthio)-3,3-(benzoimidazol-2-yl)-1-prop-2-en-2-one (11.2g), m.p. 224°C.

REFERENCE EXAMPLE 162-Acetyl-1-(tetrahydropyran-2-yl)-benzoimidazole

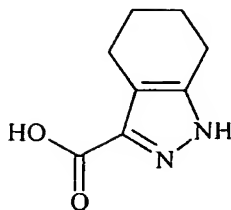
- 20 Dihydropyran (20.5mL) as added dropwise to a solution of 2-acetylbenzoimidazole (32g) and p-toluenesulfonic acid (2g) in dichloromethane (280mL) at reflux. The reaction mixture was stirred at this temperature for 24 hours, then cooled and the insoluble materials were filtered off. The filtrate was concentrated to give 2-acetyl-1-(tetrahydropyran-2-yl)-benzoimidazole as an amber oil (51.8g). TLC: (dichloromethane:methanol, 97:3)  $R_F$  = 0.80.

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REFERENCE EXAMPLE 17

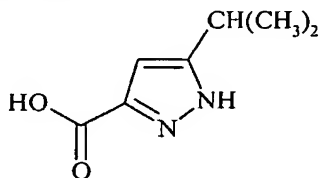
- (a) 4,5,6,7-Tetrahydro-1H-indazole-3-carboxylic acid

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A solution of 4,5,6,7-tetrahydro-1H-indazole-3-carboxylic acid ethyl ester [0.606g, Reference Example 18(a)] in methanol (50ml) was treated with sodium hydroxide (0.500g). The mixture was refluxed for 16 hours, then cooled and then evaporated. The residual white solid was treated with hydrochloric acid (30ml, 2N) and the resulting solution was extracted three times with ethyl acetate (50ml). The combined organic extracts were dried over sodium sulfate and then evaporated to yield 4,5,6,7-tetrahydro-1H-indazole-3-carboxylic acid (0.424g) as a white solid. LC-MS (METHOD B):  $R_T=2.44$  minutes; 167 (M+H)<sup>+</sup>.

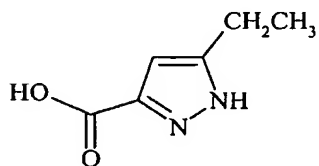
10 (b) 5-Isopropyl-1H-pyrazole-3-carboxylic acid



By proceeding to a manner similar to Example 17(a) above but using 5-isopropyl-1H-pyrazole-3-carboxylic acid ethyl ester [Reference Example 18(b)], there was prepared 5-isopropyl-1H-pyrazole-3-carboxylic acid as a white solid (0.973g) which was used without further purification.

15 LC-MS (METHOD B):  $R_T=2.43$  minutes; 155 (M+H)<sup>+</sup>.

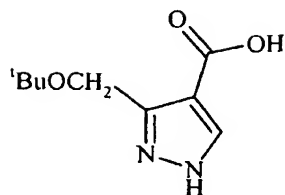
(c) 5-Ethyl-1H-pyrazole-3-carboxylic acid



By proceeding in a manner similar to Reference Example 17(a) above, but using 5-ethyl-1H-pyrazole-3-carboxylic acid ethyl ester [Reference Example 18(c)], there was prepared 5-ethyl-1H-pyrazole-3-carboxylic acid as a white solid. LC-MS (METHOD B):  $R_T=2.34$  minutes; 141 (M+H)<sup>+</sup>.

20 (d) 3-tert-Butyloxymethyl-1H-pyrazole-4-carboxylic acid

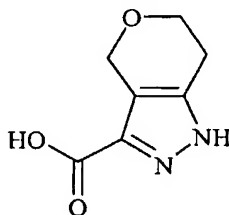
-486-



By proceeding in a manner similar to Reference Example 17(a) above, but using 3-*tert*-butyloxymethyl-1H-pyrazole-4-carboxylic acid ethyl ester [Reference Example 42], there was prepared 3-*tert*-butyloxymethyl-1H-pyrazole-4-carboxylic acid as a white solid which was used without further

5 purification. LC-MS (METHOD B):  $R_T$ =2.75 minutes; 199 (M+H)<sup>+</sup>.

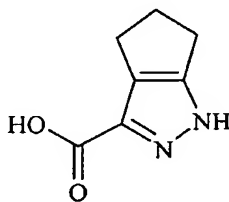
(e) 1,4,6,7-Tetrahydro-pyrano[4,3-c]pyrazole-3-carboxylic acid



By proceeding in a manner similar to Reference Example 17(a) above but using 1,4,6,7-tetrahydro-pyrano[4,3-c]pyrazole-3-carboxylic acid ethyl ester [Reference Example 18(e)] there was prepared 1,4,6,7-tetrahydro-pyrano[4,3-c]pyrazole-3-carboxylic acid (261 mg) as a white solid. LC-MS

10 (METHOD B):  $R_T$  = 1.98 minutes, 169 (M+H)<sup>+</sup>.

(f) 1,4,5,6-Tetrahydro-cyclopentapyrazole-3-carboxylic acid



By proceeding in a manner similar to Reference Example 17(a) above but using 1,4,5,6-tetrahydro-cyclopentapyrazole-3-carboxylic acid ethyl ester [Reference Example 18(f)] there was prepared 1,4,5,6-tetrahydro-cyclopentapyrazole-3-carboxylic acid (0.641 g) as a white solid. LC-MS (METHOD

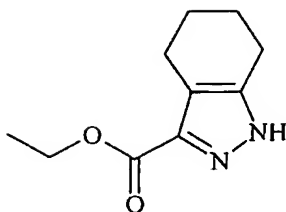
15 B):  $R_T$  = 2.13 minutes, 153.22 (M+H)<sup>+</sup>.

20

#### REFERENCE EXAMPLE 18

(a) 4,5,6,7-Tetrahydro-1H-indazole-3-carboxylic acid ethyl ester

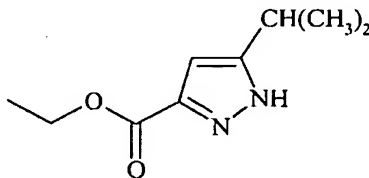
-487-



A solution of oxo-(2-oxo-cyclohexyl)-acetic acid ethyl ester [7.5g, Reference Example 19(a)] in acetic acid (150ml) was treated dropwise with hydrazine monohydrate (1.65ml). The mixture was refluxed for 8 hours, then cooled and then evaporated. The residue was partitioned between ethyl acetate (200ml) and saturated sodium bicarbonate solution (200ml) and the organic layer was dried over sodium sulfate and then evaporated. The residual orange oil was subjected to flash column chromatography on silica eluting with a mixture of ethyl acetate and hexane (1:1, v/v) to give 4,5,6,7-tetrahydro-1H-indazole-3-carboxylic acid ethyl ester (606mg) as an orange oil which solidified on standing. LC-MS (METHOD B):  $R_T$  = 2.79 minutes; 195 (M+H)<sup>+</sup>.

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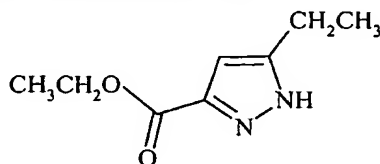
(b) 5-Isopropyl-1H-pyrazole-3-carboxylic acid ethyl ester



By proceeding to a manner similar to Reference Example 18(a) above but using 5-methyl-2,4-dioxo-hexanoic acid ethyl ester [2.00g, Reference Example 19(b)] there was prepared 5-isopropyl-1H-pyrazole-3-carboxylic acid ethyl ester as a light yellow oil which was used without further purification. LC-MS (METHOD B):  $R_T$  = 2.79 minutes; 183 (M+H)<sup>+</sup>.

15

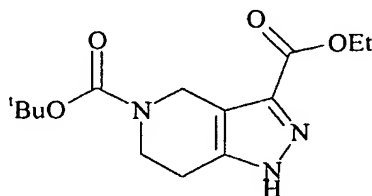
(c) 5-Ethyl-1H-pyrazole-3-carboxylic acid ethyl ester



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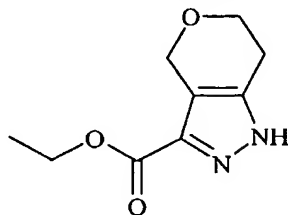
By proceeding in a manner similar to Reference Example 18(a) above, but using 2,4-dioxo-hexanoic acid ethyl ester [Reference Example 19(c)], and subjecting the reaction product, an orange oil, to flash chromatography on silica eluting with a mixture of ethyl acetate and hexane (8:1, v/v), there was prepared 5-ethyl-1H-pyrazole-3-carboxylic acid ethyl ester as a yellow oil. LC-MS (METHOD B):  $R_T$  = 2.64 minutes; 169 (M+H)<sup>+</sup>.

- (d) 1,4,6,7-Tetrahydro-pyrazolo[4,3-c]pyridine-3,5-dicarboxylic acid 5-*tert*-butyl ester 3-ethyl ester



- 5 By proceeding in a manner similar to Reference Example 18(a) above, but using 3-ethoxyoxalyl-4-oxo-piperidine-1-carboxylic acid *tert*-butyl ester [Reference Example 19(d)], there was prepared 1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-3,5-dicarboxylic acid 5-*tert*-butyl ester 3-ethyl ester as a yellow oil. LC-MS (METHOD B):  $R_T$ =2.73 minutes; 296 (M+H)<sup>+</sup>.

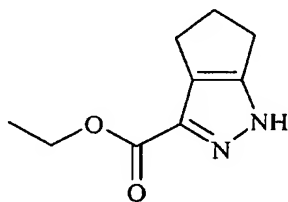
- 10 (e) 1,4,6,7-Tetrahydro-pyrano[4,3-c]pyrazole-3-carboxylic acid ethyl ester



By proceeding in a manner similar to Reference Example 18(a) above but using tetrahydro-4H-pyran-4-one there was prepared 1,4,6,7-tetrahydro-pyrano[4,3-c]pyrazole-3-carboxylic acid ethyl ester (385mg) as a white solid. LC-MS (METHOD B):  $R_T$  = 2.43 minutes, 197 (M+H)<sup>+</sup>.

15

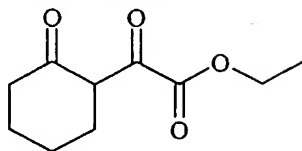
- (f) 1,4,5,6-Tetrahydro-cyclopentapyrazole-3-carboxylic acid ethyl ester



- By proceeding in a manner similar to Reference Example 18(a) above but using oxo-(2-oxo-cyclopentyl)-acetic acid ethyl ester [Reference Example 19(e)] there was prepared 1,4,5,6-tetrahydro-cyclopentapyrazole-3-carboxylic acid ethyl ester (2.06g) as a yellow solid. LC-MS (METHOD B):  $R_T$  = 2.56 minutes, 185 (M+H)<sup>+</sup>.

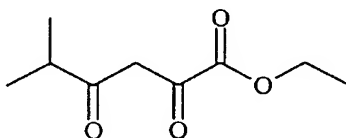
#### REFERENCE EXAMPLE 19



(a) Oxo-(2-oxo-cyclohexyl)-acetic acid ethyl ester

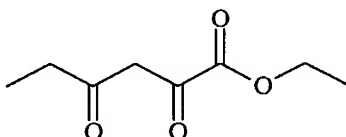
A solution of sodium (1.75g) in ethanol (100ml) was treated with a mixture of diethyl oxalate (9.41ml) and cyclohexanone (7.18ml). The mixture was heated to 60°C for 5 hours then cooled and then

5 evaporated to yield oxo-(2-oxo-cyclohexyl)-acetic acid ethyl ester as a brown foam (16.635g). LC-MS (METHOD B):  $R_T = 3.10$  minutes; 197 (M-H)<sup>-</sup>.

(b) 5-Methyl-2,4-dioxo-hexanoic acid ethyl ester

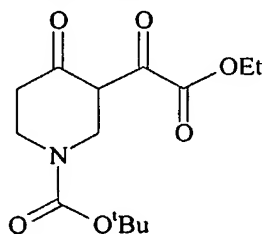
10

By proceeding to a manner similar to Example 19(a) above but using 3-methyl-2-butanone there was prepared 5-methyl-2,4-dioxo-hexanoic acid ethyl ester as a white solid. LC-MS (METHOD B):  $R_T = 3.47$  minutes; 187 (M+H)<sup>+</sup>.

15 (c) 2,4-Dioxo-hexanoic acid ethyl ester

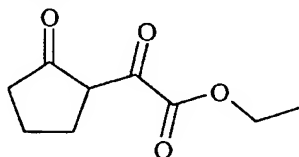
By proceeding in a manner similar to Reference Example 19(a) above, but using 2-butanone, there was prepared 2,4-dioxo-hexanoic acid ethyl ester as a brown oil which was used without further purification. LC-MS (METHOD B):  $R_T = 3.28$  minutes; 173 (M+H)<sup>+</sup>.

20

(d) 3-Ethoxyoxalyl-4-oxo-piperidine-1-carboxylic acid tert-butyl ester

By proceeding in a manner similar to Reference Example 19(a) above, but using N-Boc piperidone, there was prepared 3-ethoxyoxalyl-4-oxo-piperidine-1-carboxylic acid tert-butyl ester as a brown oil which was used without further purification. LC-MS (METHOD B):  $R_T=3.43$  minutes; 244 (M-tBu)<sup>+</sup>.

5 (e) Oxo-(2-oxo-cyclopentyl)-acetic acid ethyl ester

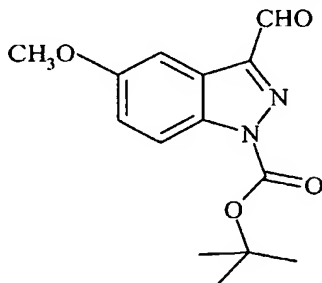


By proceeding in a manner similar to Reference Example 19(a) above but using cyclopentanone there was prepared oxo-(2-oxo-cyclopentyl)-acetic acid ethyl ester (9.99g) as a yellow solid. LC-MS (METHOD B):  $R_T = 3.12$  minutes, 185 (M+H)<sup>+</sup>.

10

REFERENCE EXAMPLE 20

(a) 3-Formyl-5-methoxy-indazole-1-carboxylic acid tert-butyl ester



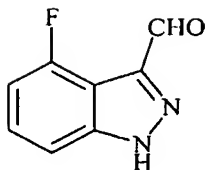
15

A solution of 5-methoxy-3-(2-methoxycarbonyl-vinyl)-indazole-1-carboxylic acid *tert*-butyl ester [282mg, Reference Example 21(a)] in tetrahydrofuran (4ml) and water (1.5ml) was treated with a solution of osmium tetroxide in water (54μL, 4wt%) and sodium periodate (400mg). The reaction mixture was stirred at ambient temperature for 16 hours and then filtered. The filtrate was evaporated and the residue was partitioned between ethyl acetate and water. The organic layer was dried over magnesium sulfate and then evaporated. The residue was subjected to flash column chromatography on silica eluting with a mixture of ethyl acetate and petrol (1:9, v/v) to yield 3-formyl-5-methoxy-indazole-1-carboxylic acid tert-butyl ester (162mg) as a white solid. LC-MS (METHOD B):  $R_T = 2.97$  minutes; 277 (M+H)<sup>+</sup>.

20

(b) 4-Fluoro-1H-indazole-3-carbaldehyde

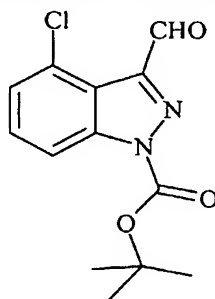
-491-



By proceeding in a manner similar to Reference Example 20(a) but using 4-fluoro-3-(2-methoxycarbonyl-vinyl)-indazole-1-carboxylic acid *tert*-butyl ester [Reference Example 21(b)] there was prepared 4-fluoro-1H-indazole-3-carbaldehyde as a light brown solid. LC-MS (METHOD B):  $R_T$

5 = 2.63 minutes; 165 (M+H)<sup>+</sup>.

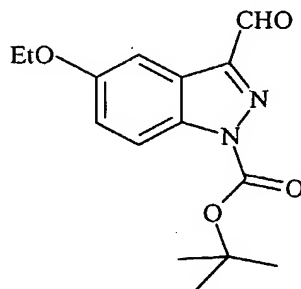
(c) 4-Chloro-3-formyl-indazole-1-carboxylic acid *tert*-butyl ester



10 By proceeding in a manner similar to Reference Example 20(a) but using 4-chloro-3-(2-methoxycarbonyl-vinyl)-indazole-1-carboxylic acid *tert*-butyl ester [Reference Example 21(c)] there was prepared 4-chloro-3-formyl-indazole-1-carboxylic acid *tert*-butyl ester (0.217g) as a brown oil.

LC-MS (METHOD B):  $R_T$  = 3.49 minutes; 283 (M+H)<sup>+</sup>.

(d) 5-Ethoxy-3-formyl-indazole-1-carboxylic acid *tert*-butyl ester

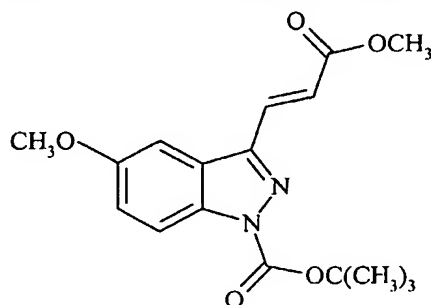


15

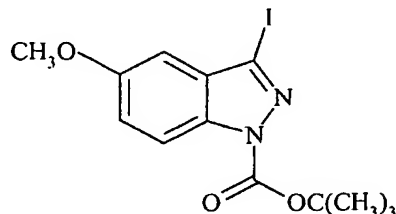
By proceeding in a manner similar to Reference Example 20(a) but using 5-ethoxy-3-(2-methoxycarbonyl-vinyl)-indazole-1-carboxylic acid *tert*-butyl ester [Reference Example 21(d)] there was prepared 5-ethoxy-3-formyl-indazole-1-carboxylic acid *tert*-butyl ester as a brown oil. TLC(ethyl acetate:hexane, 1:9, v/v):  $R_F$  = 0.25. <sup>1</sup>H NMR (400MHz, CDCl<sub>3</sub>): δ 1.38(3H, t), 1.67(9H, s), 4.05(2H, q), 7.12(1H, d), 7.60(1H, s), 7.98(1H, d), 10.20(1H, s).

20

## REFERENCE EXAMPLE 21

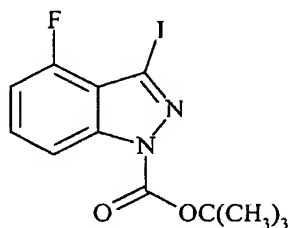
(a) 5-Methoxy-3-(2-methoxycarbonyl-vinyl)-indazole-1-carboxylic acid *tert*-butyl ester

- 5 A solution of 3-iodo-5-methoxy-indazole-1-carboxylic acid *tert*-butyl ester [0.500g, Reference Example 22(a)] in dioxane (15ml) and under an atmosphere of nitrogen was treated with triethylamine (1.86ml) followed by methyl acrylate (1.20ml), triphenylphosphine (0.105g), and palladium (II) acetate (60mg). The resulting mixture was heated at 50°C for 16 hours, then cooled to ambient temperature and then evaporated. The residue was partitioned between ethyl acetate and water. The organic layer
- 10 was washed with brine, then dried over magnesium sulfate and then evaporated. The residue was subjected to flash column chromatography on silica eluting with a mixture of ethyl acetate and 40/60 petrol (1:9, v/v) to yield 5-methoxy-3-(2-methoxycarbonyl-vinyl)-indazole-1-carboxylic acid *tert*-butyl ester (282mg). LC-MS (METHOD B):  $R_T=3.33$  minutes; 333 (M+H)<sup>+</sup>.
- 15 (b) By proceeding in a manner similar to Reference Example 21(a) but using 4-fluoro-3-iodo-indazole-1-carboxylic acid *tert*-butyl ester [Reference Example 22(b)] there was prepared 4-fluoro-3-(2-methoxycarbonyl-vinyl)-indazole-1-carboxylic acid *tert*-butyl ester as a light brown solid. LC-MS (METHOD B):  $R_T=3.39$  minutes; 321 (M+H)<sup>+</sup>.
- 20 (c) By proceeding in a manner similar to Reference Example 21(a) but using 4-chloro-3-iodo-indazole-1-carboxylic acid *tert*-butyl ester [Reference Example 22(c)] there was prepared 4-chloro-3-(2-methoxycarbonyl-vinyl)-indazole-1-carboxylic acid *tert*-butyl ester as a brown solid. LC-MS (METHOD B):  $R_T=3.48$  minutes; 339 (M+H)<sup>+</sup>.
- 25 (d) By proceeding in a manner similar to Reference Example 21(a) but using 5-ethoxy-3-iodo-indazole-1-carboxylic acid *tert*-butyl ester [Reference Example 22(d)] there was prepared 5-ethoxy-3-(2-methoxycarbonyl-vinyl)-indazole-1-carboxylic acid *tert*-butyl ester as an off-white solid. LC-MS (METHOD B):  $R_T=3.41$  minutes; 347 (M+H)<sup>+</sup>.

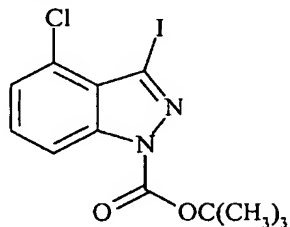
REFERENCE EXAMPLE 22(a) 3-Iodo-5-methoxy-indazole-1-carboxylic acid *tert*-butyl ester

- 5 A solution of 3-iodo-5-methoxy-1H-indazole [1.48g, Reference Example 23(a)] in acetonitrile (6ml) was treated with triethylamine (0.98ml) and N,N-dimethylaminopyridine (0.132g). The mixture was cooled to 0°C then treated with a solution of di-*tert*-butyl dicarbonate (1.41g) in acetonitrile (6ml). After stirring for 1 hour at ambient temperature the reaction mixture was evaporated and the residue was partitioned between ethyl acetate and water. The pH was adjusted to 2 and the organic layer was dried over magnesium sulfate and then evaporated. The residual orange oil was subjected to flash
- 10 column chromatography on silica eluting with a mixture of ethyl acetate and petrol (1:4, v/v) to yield 3-iodo-5-methoxy-indazole-1-carboxylic acid *tert*-butyl ester (1.72g) as a yellow solid.

LC-MS (METHOD B):  $R_T = 3.45$  minutes; 375 (M+H)<sup>+</sup>.

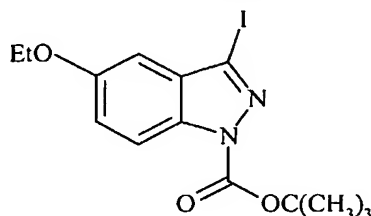
(b) 4-Fluoro-3-iodo-indazole-1-carboxylic acid *tert*-butyl ester

- 15 By proceeding in a manner similar to Reference Example 22(a) above but using 4-fluoro-3-iodo-1H-indazole [Reference Example 23(b)] there was prepared 4-fluoro-3-iodo-indazole-1-carboxylic acid *tert*-butyl ester as a light brown solid. LC-MS (METHOD B):  $R_T = 3.48$  minutes; 363 (M+H)<sup>+</sup>.

20 (c) 4-Chloro-3-iodo-indazole-1-carboxylic acid *tert*-butyl ester

By proceeding in a manner similar to Reference Example 22(a) above but using 4-chloro-3-iodo-1H-indazole [Reference Example 23(c)] there was prepared 4-chloro-3-iodo-indazole-1-carboxylic acid *tert*-butyl ester as a brown solid. LC-MS (METHOD B):  $R_T = 3.39$  minutes; 381 (M+H)<sup>+</sup>.

5 (d) 5-Ethoxy-3-iodo-indazole-1-carboxylic acid *tert*-butyl ester

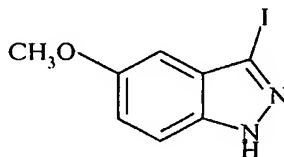


By proceeding in a manner similar to Reference Example 22(a) above but using 5-ethoxy-3-iodo-1H-indazole [Reference Example 23(d)] there was prepared 5-ethoxy-3-iodo-indazole-1-carboxylic acid *tert*-butyl ester as an off-white solid. LC-MS (METHOD B):  $R_T = 3.49$  minutes; 389 (M+H)<sup>+</sup>.

10

REFERENCE EXAMPLE 23

(a) 3-Iodo-5-methoxy-1H-indazole

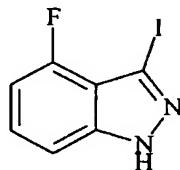


15

A solution of 5-methoxy-1H-indazole [0.815g, Reference Example 24(a)] in dimethyl formamide (8ml) was treated with iodine (2.80g) and potassium hydroxide (1.16g). The mixture was stirred at ambient temperature for 1 hour then poured into 10% aqueous sodium bisulfite solution (200ml) and then extracted three times with ethyl acetate. The combined organic extracts were washed with water, then with brine, then dried over magnesium sulfate and then evaporated to yield 3-iodo-5-methoxy-1H-indazole (1.48g) as a yellow solid. LC-MS (METHOD B):  $R_T = 2.96$  minutes; 275 (M+H)<sup>+</sup>.

20

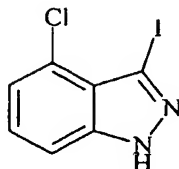
(b) 4-Fluoro-3-iodo-1H-indazole



By proceeding in a manner similar to Reference Example 23(a) above but using 4-fluoro-1H-indazole [Reference Example 24(b)] there was prepared 4-fluoro-3-iodo-1H-indazole as a red solid.

LC-MS (METHOD B):  $R_T = 3.06$  minutes; 281 (M+H)<sup>+</sup>.

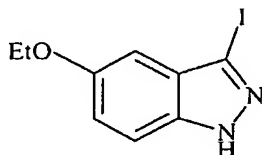
(c) 4-Chloro-3-iodo-1H-indazole



- 5 By proceeding in a manner similar to Reference Example 23(a) above but using 4-chloro-1H-indazole [Reference Example 24(c)] there was prepared 4-chloro-3-iodo-1H-indazole as a light brown solid.

LC-MS (METHOD B):  $R_T = 2.97$  minutes; 263 (M+H)<sup>+</sup>.

(d) 5-Ethoxy-3-iodo-1H-indazole



10

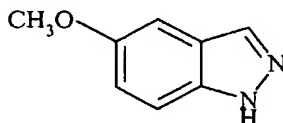
- By proceeding in a manner similar to Reference Example 23(a) above but using 5-ethoxy-1H-indazole [Reference Example 37] there was prepared 5-ethoxy-3-iodo-1H-indazole as a light brown solid.

LC-MS (METHOD B):  $R_T = 2.97$  minutes; 263 (M+H)<sup>+</sup>.

15

REFERENCE EXAMPLE 24

(a) 5-Methoxy-1H-indazole



20

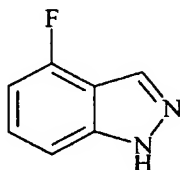
A solution of 4-methoxy-2-methylaniline (2ml) in dichloromethane (10ml) was treated with triethylamine (3.27ml). The mixture was cooled to 0°C then treated with acetic anhydride (2.38ml), then stirred at ambient temperature for 1 hour, then cooled to 0°C when a pink solid precipitated. This solid was filtered, then washed with cold dichloromethane and then dissolved in acetic acid (55ml) and concentrated hydrochloric acid (20ml). This solution was cooled to -5°C, then treated with a solution of sodium nitrite (2.68g) in water (20ml), then stirred at that temperature for 1 hour and then treated with water (100ml). This mixture was stirred vigorously at 0°C for 10 minutes after which a yellow solid precipitated. This solid was filtered, then washed with water and then dissolved in toluene (13ml). This solution was heated to 80°C for 1.5 hours, then cooled and then washed with aqueous 1N

25

sodium carbonate solution. The organic phase was extracted three times with aqueous 2N hydrochloric acid and the acid extracts chilled and then made alkaline by addition of aqueous 5N sodium hydroxide solution. The aqueous layers were extracted three times with ethyl acetate and the combined organic layers were dried over magnesium sulfate and then evaporated to yield 5-methoxy-1H-indazole

5 (0.410g) as a yellow solid. LC-MS (METHOD B):  $R_T = 1.32$  minutes; 149 (M+H)<sup>+</sup>.

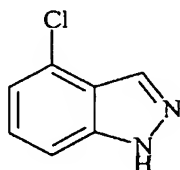
(b) 4-Fluoro-1H-indazole



To tetrafluoroboric acid (8.2ml, 48 wt % in water) was added 3-fluoro-2-methylaniline (2.27ml). The mixture was cooled to 0°C when a precipitate formed which was redissolved by the addition of water (8ml). A solution of sodium nitrite (1.38g) in water (2.7ml) was then added dropwise and the mixture was then allowed to warm to ambient temperature and then stirred for a further 1 hour. The precipitated solid was filtered, then washed with diethyl ether, and then dried under suction for 30 minutes. The resulting tetrafluoroborate salt was added to a suspension of potassium acetate (3.92g) and 18-crown-6 (0.264g) in chloroform (45ml). After stirring for 3 hours at ambient temperature the bright orange mixture was filtered and the insoluble material was washed with dichloromethane, then subjected to flash column chromatography on silica eluting with a mixture of 40/60 petrol and ethyl acetate (3:1 v/v) to give 4-fluoro-1H-indazole (0.675g) as an off-white solid. LC-MS (METHOD B):  $R_T = 2.70$  minutes; 137 (M+H)<sup>+</sup>.

20

(c) 4-Chloro-1H-indazole



By proceeding to a manner similar to Reference Example 24(a) above but using 3-chloro-2-methylaniline, there was prepared 4-chloro-1H-indazole as a red solid (0.807g) which was used without further purification. LC-MS (METHOD B):  $R_T = 2.90$  minutes; 155 (M+H)<sup>+</sup>.

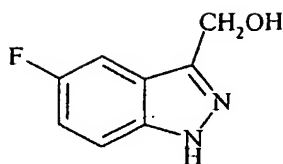
25

REFERENCE EXAMPLE 25

(a) (5-fluoro-1H-indazol-3-yl)-methanol



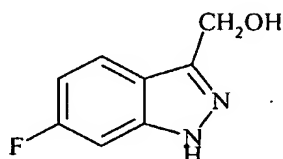
-497-



A solution of 5-fluoro-1H-indazole-3-carboxylic acid [0.680g, Reference Example 26(a)] in anhydrous tetrahydrofuran (15ml), at 0°C, was treated portionwise with lithium aluminium hydride (0.716g), then stirred for 2 hours at ambient temperature and then treated with saturated aqueous sodium sulfate. The reaction mixture was acidified by addition of hydrochloric acid (1N) and then extracted three times with ethyl acetate (30ml). The combined organic extracts were dried over magnesium sulfate and then evaporated. The residual dark brown oil was subjected to flash column chromatography on silica eluting with a mixture of 40/60 petrol and ethyl acetate (1:1 to 1:3 v/v) to yield (5-fluoro-1H-indazol-3-yl)-methanol (0.144g) as a brown solid. LC-MS (METHOD B):  $R_T = 2.40$  minutes; 167 (M+H)<sup>+</sup>.

10

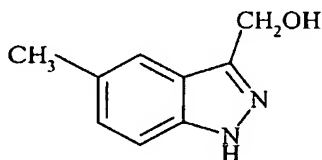
(b) (6-Fluoro-1H-indazol-3-yl)-methanol



By proceeding in a manner similar to Reference Example 25(a) above but using 6-fluoro-1H-indazole-3-carboxylic acid [Reference Example 26(b)] there was prepared (6-fluoro-1H-indazol-3-yl)-methanol (0.265g) as a dark grey solid. LC-MS (METHOD B):  $R_T = 2.40$  minutes, 165 (M-H).

15

(c) (5-Methyl-1H-indazol-3-yl)-methanol

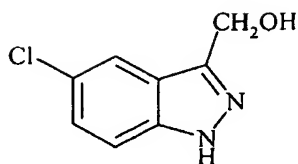


By proceeding in a manner similar to Reference Example 25(a) above but using 5-methyl-1H-indazole-3-carboxylic acid [Reference Example 26(c)] there was prepared (5-methyl-1H-indazol-3-yl)-methanol (0.511g) as a brown oil. LC-MS (METHOD B):  $R_T = 2.45$  minutes; 163 (M+H)<sup>+</sup>.

20

(d) (5-Chloro-1H-indazol-3-yl)-methanol

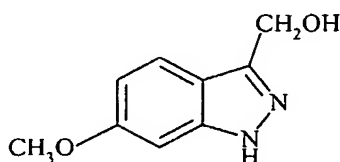
-498-



By proceeding in a manner similar to Reference Example 25(a) above but using 5-chloro-1H-indazole-3-carboxylic acid [Reference Example 26(d)] there was prepared (5-chloro-1H-indazol-3-yl)-methanol as a dark brown oil which solidified on standing. LC-MS (METHOD B):  $R_T = 2.51$  minutes; 185

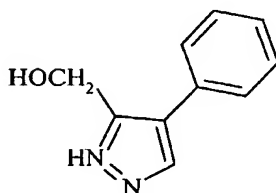
5 (M+H)<sup>+</sup>.

(e) (6-Methoxy-1H-indazol-3-yl)-methanol



10 By proceeding in a manner similar to Reference Example 25(a) above but using 6-methoxy-1H-indazole-3-carboxylic acid [Reference Example 26(e)] there was prepared (6-methoxy-1H-indazol-3-yl)-methanol (0.265g) as a brown solid. LC-MS (METHOD B):  $R_T = 2.37$  minutes; 179 (M+H)<sup>+</sup>.

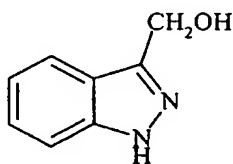
(f) (4-Phenyl-1H-pyrazol-3-yl)-methanol



15 By proceeding in a manner similar to Reference Example 25(a) above but using 4-phenyl-1H-pyrazole-3-carboxylic acid [Reference Example 47] and subjecting the reaction product to flash column chromatography on silica eluting with a mixture of dichloromethane and methanol (9:1, v/v) there was prepared (4-phenyl-1H-pyrazol-3-yl)-methanol. LC-MS (METHOD B):  $R_T = 2.51$  minutes; 175 (M+H)<sup>+</sup>.

20

(g) (1H-indazol-3-yl)-methanol

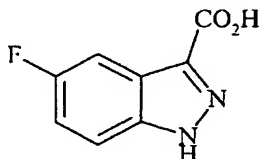


By proceeding in a manner similar to Reference Example 25(a) above but using indazole-3-carboxylic acid and subjecting the reaction product to column chromatography on silica eluting with a mixture of a mixture of *n*-hexane and ethyl acetate (1:1) to ethyl acetate there was prepared (1*H*-indazol-3-yl)-methanol as a pale yellow solid. LC-MS (METHOD B):  $R_T = 3.17$  minutes; 149.21 ([M+H]<sup>+</sup>).

5

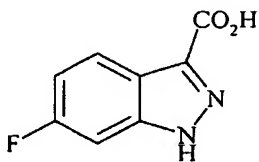
#### REFERENCE EXAMPLE 26

(a) 5-Fluoro-1*H*-indazole-3-carboxylic acid



A solution of 5-fluoroisatin (2g) and sodium hydroxide (0.509g) in water (20ml) was heated to 50°C for 30 minutes, then cooled and then treated with sodium nitrite (0.836g). This mixture was added over 10 minutes to a solution of concentrated sulfuric acid (2.26g) in water (200ml), at 0°C, whilst maintaining the temperature below 5°C. After a further 15 minutes a solution of tin (II) chloride (5.51g) in concentrated hydrochloric acid (10.5ml) was added and the resulting mixture maintained at 5°C for a further 30 minutes. The mixture was then stirred for a further 1 hour whilst warming to ambient temperature then filtered. The light brown paste was dissolved in ethyl acetate and the solution was dried over magnesium sulfate and then evaporated to yield 5-fluoro-1*H*-indazole-3-carboxylic acid (0.863g) as a light brown solid which was used without further purification. LC-MS (METHOD B):  $R_T = 2.51$  minutes; 181 (M+H)<sup>+</sup>.

20 (b) 6-Fluoro-1*H*-indazole-3-carboxylic acid

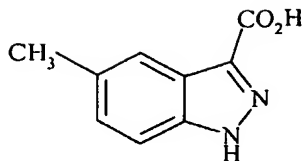


By proceeding in a manner similar to Reference Example 26(a) above but using 6-fluoro-1*H*-indole-2,3-dione [Reference Example 27(a)] there was prepared 6-fluoro-1*H*-indazole-3-carboxylic acid (1.962g) as a light brown solid. LC-MS (METHOD B):  $R_T = 2.50$  minutes; 181 (M+H)<sup>+</sup>.

25

(c) 5-Methyl-1*H*-indazole-3-carboxylic acid

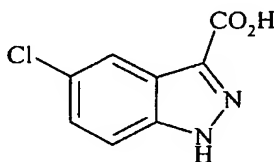
-500-



By proceeding in a manner similar to Reference Example 26(a) above but using 5-methyl isatin there was prepared 5-methyl-1H-indazole-3-carboxylic acid as a light brown solid. LC-MS (METHOD B):  $R_T = 2.53$  minutes; 177 (M+H)<sup>+</sup>.

5

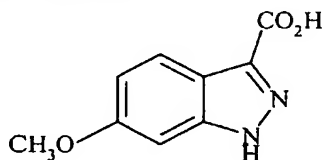
(d) 5-Chloro-1H-indazole-3-carboxylic acid



By proceeding in a manner similar to Reference Example 26(a) above but using 5-chloro isatin there was prepared 5-chloro-1H-indazole-3-carboxylic acid as a light brown solid. LC-MS (METHOD B):

10  $R_T = 2.58$  minutes; 171 (M+H)<sup>+</sup>.

(e) 6-Methoxy-1H-indazole-3-carboxylic acid

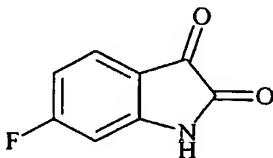


By proceeding in a manner similar to Reference Example 26(a) above but using 6-methoxy-1H-indole-2,3-dione [2.50g, Reference Example 27(b)] there was prepared 6-methoxy-1H-indazole-3-carboxylic acid as a light brown solid. LC-MS (METHOD B):  $R_T = 2.45$  minutes; 193 (M+H)<sup>+</sup>.

15

REFERENCE EXAMPLE 27

(a) 6-Fluoro-1H-indole-2,3-dione



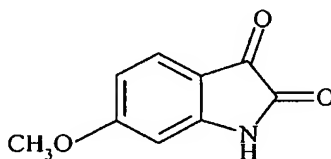
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To vigorously stirring polyphosphoric acid (100g) at 75°C was added N-(3-fluoro-phenyl)-2-hydroxyimino-acetamide [10.304g, Reference Example 28(a)] portionwise over 30 minutes. The resulting mixture was stirred at 80°C for 15 minutes, then poured into ice, then left to stand for 16

hours and then filtered to give a brown paste. The filtrate was extracted four times with ethyl acetate. The combined organic fractions were dried over magnesium sulfate and then evaporated. The residue and the brown paste from the filtration above were combined and treated with aqueous sodium hydroxide (1N). The mixture was filtered and the filtrate was acidified by addition of aqueous hydrochloric acid (2N). The resulting brown solid was filtered and then treated with aqueous sodium hydroxide (1N). This mixture was filtered and the filtrate was acidified by addition of aqueous hydrochloric acid (2N) and then filtered. The combined acidic aqueous filtrates were extracted four times with ethyl acetate, then dried over magnesium sulfate, and then evaporated to give 6-fluoro-1H-indole-2,3-dione (1.861 g) as a pale orange solid. LC-MS (METHOD B):  $R_T = 2.49$  minutes; 166

(M+H)<sup>+</sup>.

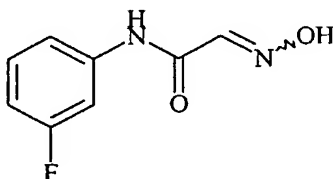
(b) 6-Methoxy-1H-indole-2,3-dione



By proceeding in a manner similar to Reference Example 27(a) above but using 2-hydroxyimino-N-(3-methoxy-phenyl)-acetamide [7.20g, Reference Example 28(b)] there was prepared 6-methoxy-1H-indole-2,3-dione as a brown solid. LC-MS (METHOD B):  $R_T = 2.49$  minutes; 178 (M+H)<sup>+</sup>.

#### REFERENCE EXAMPLE 28

(a) N-(3-Fluoro-phenyl)-2-hydroxyimino-acetamide



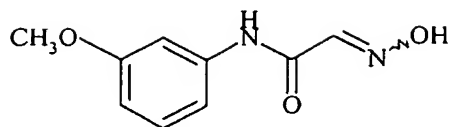
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A mixture of chloral hydrate (0.819g) in water (25ml) was treated with sodium sulfate (5.10g), 3-fluoroaniline (0.43ml), concentrated hydrochloric acid (0.3ml), and hydroxylamine hydrochloride (0.938g). The mixture was warmed to 80°C for 2 hours then allowed to cool and then filtered. The solid was washed with water and then dried in air for 16 hours to afford N-(3-fluoro-phenyl)-2-hydroxyimino-acetamide (0.756g) as a buff solid. LC-MS (METHOD B):  $R_T = 2.51$  minutes; 181 (M+H)<sup>+</sup>.

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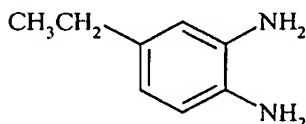
(b) 2-Hydroxyimino-N-(3-methoxy-phenyl)-acetamide

-502-



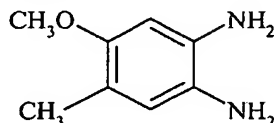
By proceeding in a manner similar to Reference Example 28(a) above but using m-anisidine (0.5ml) there was prepared 2-hydroxyimino-N-(3-methoxy-phenyl)-acetamide as a brown solid. LC-MS (METHOD B):  $R_T = 2.44$  minutes; 195 (M+H)<sup>+</sup>.

5

REFERENCE EXAMPLE 29(a) 4-Ethyl-phenylene diamine

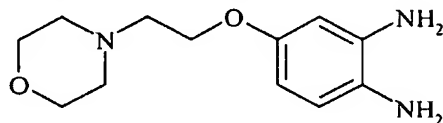
A stirred solution of 5-ethyl-2-nitro-aniline [200 mg, Reference Example 30(a)] and tin chloride (2.75 g) in ethanol (5 ml) was heated in a Smith Creator microwave at 140°C for 10 minutes. The reaction mixture was basified to pH 8 by addition of saturated sodium hydrogen carbonate solution and then extracted with ethyl acetate. The organic extracts were dried over magnesium sulfate and then evaporated to give 4-ethyl-phenylene diamine (140 mg) as a pale orange solid, which was used without future purification. MS: 137.2 (M+H)<sup>+</sup>. HPLC (METHOD H):  $R_T = 2.91$  minutes.

15

(b) 4-Methoxy-5-methyl-benzene-1,2-diamine

By proceeding in a manner similar to Reference Example 29(a) above but using 4-methoxy-5-methyl-2-nitro-phenylamine [582mg, Reference Example 31(i)] there was prepared 4-methoxy-5-methyl-benzene-1,2-diamine (454mg) as a light brown solid. LC-MS (Method K):  $R_T = 2.39$  minutes, 153.20 (M+H)<sup>+</sup>.

20

(c) 4-(2-Morpholin-4-yl-ethoxy)-benzene-1,2-diamine

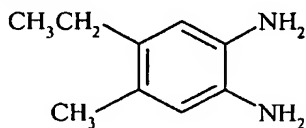
By proceeding in a manner similar to Reference Example 29(a) above but using 4-[2-(3,4-dinitro-phenoxy)-ethyl]-morpholine [Reference Example 67] there was prepared 4-(2-morpholin-4-yl-ethoxy)-

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benzene-1,2-diamine (170mg) as a pale brown oil. LC-MS (METHOD N):  $R_T = 2.2$  minutes, 238.21 (M+H)<sup>+</sup>.

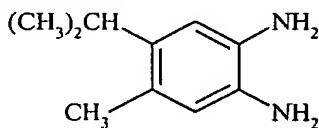
REFERENCE EXAMPLE 30

5 (a) 4-Ethyl-5-methyl-phenylene diamine



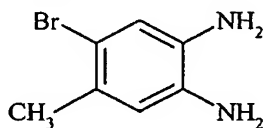
A stirred solution of 4-ethyl-5-methyl-2-nitro-aniline [484 mg, Reference Example 31(b)] in methanol (20 ml) was treated with tin chloride (5.09 g), then heated at reflux for 16 hours and then cooled to ambient temperature. The pH of the reaction mixture was adjusted to pH 8 by addition of aqueous sodium bicarbonate and then this mixture was extracted with ethyl acetate. The organic extracts were dried over magnesium sulfate and then evaporated to give 4-ethyl-5-methyl-phenylene diamine (374 mg) as an off-white solid. LC-MS (METHOD B):  $R_T = 1.80$  minutes; 151.25 (M+H)<sup>+</sup>.

15 (b) 4-Isopropyl-5-methyl-phenylene diamine



By proceeding in a manner similar to Reference Example 30(a) above but using 4-isopropyl-5-methyl-2-nitro-aniline [Reference Example 31(c)] there was prepared 4-isopropyl-5-methyl-phenylene diamine as a light brown solid. LC-MS (Method C):  $R_T = 3.30$  minutes; 165.16 (M+H)<sup>+</sup>.

20 (c) 4-Bromo-5-methyl-phenylene diamine

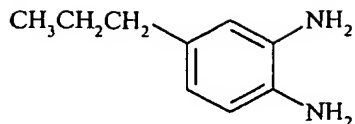


By proceeding in a manner similar to Reference Example 30(a) above but using 4-bromo-5-methyl-2-nitro-aniline [Reference Example 31(d)] there was prepared 4-bromo-5-methyl-phenylene diamine as an off-white solid. LC-MS (METHOD B):  $R_T = 2.63$  minutes; 203.22 (M+H)<sup>+</sup>.

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(d) 4-n-propyl-phenylene diamine

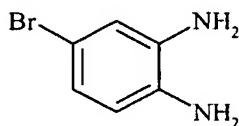
-504-



By proceeding in a manner similar to Reference Example 30(a) above but using 4-n-propyl-2-nitro-aniline [Reference Example 31(e)] there was prepared 4-n-propyl-phenylene diamine as an off-white solid. LC-MS (METHOD B):  $R_T = 2.07$  minutes, 151.30 (M+H)<sup>+</sup>.

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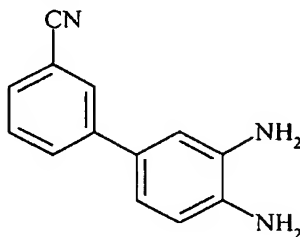
(c) 4--Bromo-phenylene diamine



By proceeding in a manner similar to Reference Example 30(a) above but using 4-bromo-2-nitro-aniline there was prepared 4-bromo-phenylene diamine as a yellow solid. LC-MS (METHOD B):  $R_T$

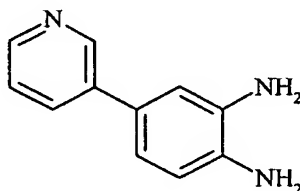
10 = 1.77 minutes; 187.22 (M+H)<sup>+</sup>.

(f) 3',4'-diaminobiphenyl-3-carbonitrile



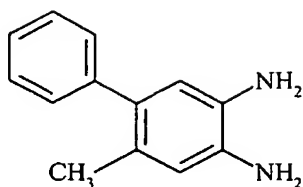
15 By proceeding in a manner similar to Reference Example 30(a) above but using 4'-amino-3'-nitro-biphenyl-3-carbonitrile [Reference Example 34(a)] there was prepared 3',4'-diaminobiphenyl-3-carbonitrile as an off-white solid. LC-MS (METHOD B):  $R_T = 2.72$  minutes; 210.3 (M+H)<sup>+</sup>.

(g) 4-(pyridine-3-yl)benzene-1,2-diamine

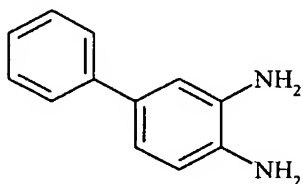


20 By proceeding in a manner similar to Reference Example 30(a) above but using 2-nitro-4-pyridine-3-yl-phenylamine [Reference Example 34(b)] there was prepared 4-(pyridine-3-yl)benzene-1,2-diamine as an off-white solid. LC-MS (METHOD B):  $R_T = 0.37$  minutes; 186.3 (M+H)<sup>+</sup>.

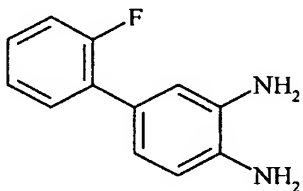


(h) 6-methylbiphenyl-3,4-diamine

By proceeding in a manner similar to Reference Example 30(a) above but using 2-methyl-5-nitro-  
5 biphenyl-4-ylamine [Reference Example 34(c)] there was prepared 6-methylbiphenyl-3,4-diamine as an off-white solid. LC-MS (METHOD B):  $R_T = 2.36$  minutes; 199.25 (M+H)<sup>+</sup>.

(i) biphenyl-3,4-diamine

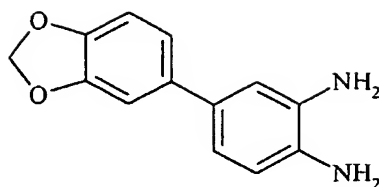
10 By proceeding in a manner similar to Reference Example 30(a) above but using 3-nitrobiphenyl-4-ylamine [Reference Example 34(d)] there was prepared biphenyl-3,4-diamine as a yellow solid. LC-MS (METHOD B):  $R_T = 2.25$  minutes; 185.3 (M+H)<sup>+</sup>.

(j) 2'-fluorobiphenyl-3,4-diamine

15 By proceeding in a manner similar to Reference Example 30(a) above but using 2'-fluoro-3-nitrobiphenyl-4-ylamine [Reference Example 34(e)] there was prepared 2'-fluorobiphenyl-3,4-diamine as a white solid. LC-MS (METHOD B):  $R_T = 2.73$  minutes; 203.31 (M+H)<sup>+</sup>.

20 (k) 4-benzo[1,3]dioxol-5-ylbenzene-1,2-diamine

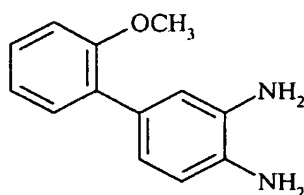
-506-



By proceeding in a manner similar to Reference Example 30(a) above but using 4-benzo[1,3]dioxo-5-yl-2-nitrophenylamine [Reference Example 34(f)] there was prepared 4-benzo[1,3]dioxol-5-ylbenzene-1,2-diamine as a white solid. LC-MS (METHOD B):  $R_T = 2.66$  minutes; 229.3 (M+H)<sup>+</sup>.

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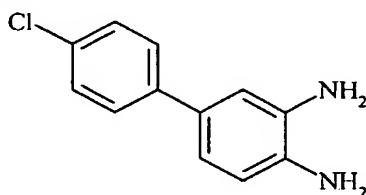
(l) 2'-methoxybiphenyl-3,4-diamine



By proceeding in a manner similar to Reference Example 30(a) above but using 2'-methoxy-3-nitro-biphenyl-4-ylamine [Reference Example 34(g)] there was prepared 2'-methoxybiphenyl-3,4-diamine as a white solid. LC-MS (METHOD B):  $R_T = 2.74$  minutes.; 215.33 (M+H)<sup>+</sup>.

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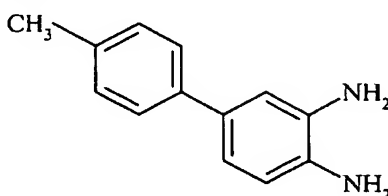
(m) 4'-chlorobiphenyl-3,4-diamine



By proceeding in a manner similar to Reference Example 30(a) above but using 4'-chloro-3-nitro-biphenyl-4-yl-amine [Reference Example 34(h)] there was prepared 4'-chlorobiphenyl-3,4-diamine as a white solid. LC-MS (METHOD B):  $R_T = 2.85$  minutes; 219.3 (M+H)<sup>+</sup>.

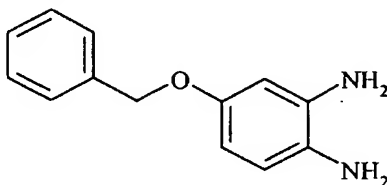
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(n) 4'-methylbiphenyl-3,4-diamine



By proceeding in a manner similar to Reference Example 30(a) above but using 4'-methyl-3-nitro-biphenyl-4-yl-amine [Reference Example 34(i)] there was prepared 4'-methylbiphenyl-3,4-diamine as a white solid. LC-MS (METHOD B):  $R_T = 2.39$  minutes, 199.25 (M+H)<sup>+</sup>.

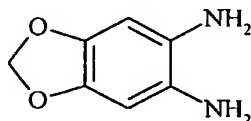
5 (o) 4-benzyloxybenzene-1,2-diamine



By proceeding in a manner similar to Reference Example 30(a) above but using 4-benzyloxy-1,2-dinitrobenzene [Reference Example 35(a)] there was prepared 4-benzyloxybenzene-1,2-diamine as a white solid. LC-MS (METHOD B):  $R_T = 2.34$  minutes, 215.33 (M+H)<sup>+</sup>.

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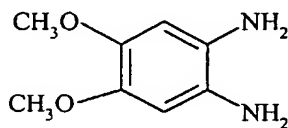
(p) benzo[1,3]dioxole-5,6-diamine



By proceeding in a manner similar to Reference Example 30(a) above but using 5,6-dinitro-benzo[1,3]dioxole [Reference Example 56(b)] there was prepared benzo[1,3]dioxole-5,6-diamine as an oily solid. LC-MS (METHOD B):  $R_T = 0.43$  minutes, 153.18 (M+H)<sup>+</sup>.

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(q) 4,5-dimethoxybenzene-1,2-diamine

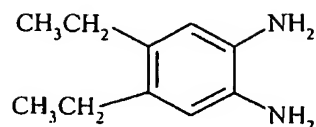


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By proceeding in a manner similar to Reference Example 30(a) above but using 4,5-dimethoxy-2-nitroaniline there was prepared 4,5-dimethoxybenzene-1,2-diamine as an oily solid. LC-MS (METHOD B):  $R_T = 0.43$  minutes, 169.24 (M+H)<sup>+</sup>.

(r) 4,5-diethylbenzene-1,2-diamine

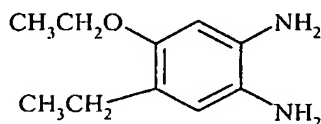
-508-



By proceeding in a manner similar to Reference Example 30(a) above but using 4,5-diethyl-2-nitroaniline [Reference Example 31(f)] there was prepared 4,5-diethylbenzene-1,2-diamine which was used without further purification. LC-MS (METHOD B):  $R_T = 2.21$  minutes,  $165.24 (M+H)^+$ .

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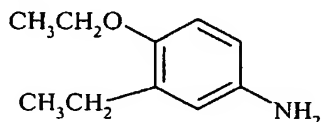
(s) 4-ethoxy-5-ethyl-benzene-1,2-diamine



By proceeding in a manner similar to Reference Example 30(a) above but using 4-ethoxy-5-ethyl-2-nitrophenylamine [Reference Example 31(g)] there was prepared 4-ethoxy-5-ethyl-benzene-1,2-diamine.

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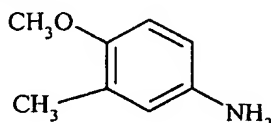
(t) 4-Ethoxy-3-ethyl-phenylamine



By proceeding in a manner similar to Reference Example 30(a) above but using 1-ethoxy-2-ethyl-4-nitrobenzene [Reference Example 32(h)] and subjecting the reaction product to chromatography on silica gel (heptane, ethyl acetate gradient 25-35%) there was prepared 4-ethoxy-3-ethyl-phenylamine (0.6 g) as an oil. GS-MS one peak,  $R_T = 7.17$  minutes. MS  $165 (M)^+$ .

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20 (u) 4-Methoxy-3-methyl-phenylamine

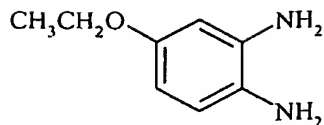


By proceeding in a manner similar to Reference Example 30(a) above but using 1-methoxy-2-methyl-4-nitrobenzene [2.7g, Reference Example 56(a)] there was prepared 4-methoxy-3-methyl-phenylamine (2.07g).  $R_F = 0.5$  [ethyl acetate/n-pentane, 1:1, v/v].

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(v) 4-Ethoxy-benzene-1,2-diamine

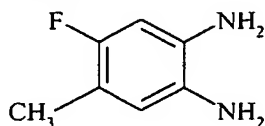
-509-



By proceeding in a manner similar to Reference Example 30(a) above but using 4-ethoxy-2-nitroaniline (1.5g) 4-ethoxy-benzene-1,2-diamine (1.02g) as a brown oil. LC-MS (Method J):  $R_T = 0.50$  and 3.88 minutes, 153.30 (M+H)<sup>+</sup>.

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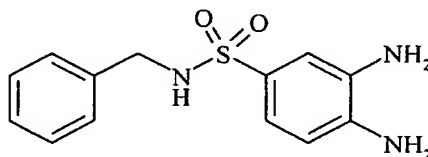
(w) 4-Fluoro-5-methyl-benzene-1,2-diamine



By proceeding in a manner similar to Reference Example 30(a) above but using 4-fluoro-5-methyl-2-nitro-phenylamine [Reference Example 31(j)] there was prepared 4-fluoro-5-methyl-benzene-1,2-

10 diamine (1.27g) as a yellow solid. LC-MS (METHOD J):  $R_T = 1.93$  minutes, 141.25 (M+H)<sup>+</sup>.

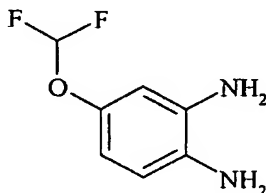
(x) 3,4-Diamino-N-benzyl-benzenesulfonamide



By proceeding in a manner similar to Reference Example 30(a) above but using 4-amino-N-benzyl-3-

15 nitro-benzenesulfonamide [Reference Example 61] there was prepared 3,4-diamino-N-benzyl-benzenesulfonamide (0.350g) as a yellow film. LC-MS (METHOD K):  $R_T = 2.87$  minutes, 278.28 (M+H)<sup>+</sup>.

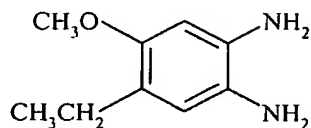
(y) 4-Difluoromethoxy-benzene-1,2-diamine



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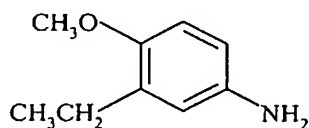
By proceeding in a manner similar to Reference Example 30(a) above but using 4-difluoromethoxy-2-nitro-phenylamine [Reference Example 31(k)] there was prepared 4-difluoromethoxy-benzene-1,2-  
diamine (2.70g) as a pale brown solid LC-MS (METHOD N):  $R_T = 2.45$  minutes, 175 (M+H)<sup>+</sup>.

(z) 4-Ethyl-5-methoxy-benzene-1,2-diamine [200 mg, Reference Example 30(z)]



5 By proceeding in a manner similar to Reference Example 30(a) but using 5-ethyl-4-methoxy-2-nitro-phenylamine [2.4 g, Reference Example 31(l)] there was prepared 4-ethyl-5-methoxy-benzene-1,2-diamine (1.6 g) as a black solid. LC-MS (METHOD 1, AMMONIUM ACETATE, 5min):  $R_T = 3.50$  minutes, 167.17 (M+H)<sup>+</sup>.

10 (aa) 3-Ethyl-4-methoxy-phenylamine

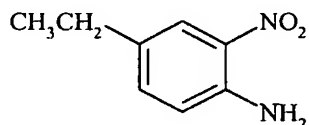


By proceeding in a manner similar to Reference Example 30(a) but using 5-ethyl-4-methoxy-2-nitro-phenylamine [3.6g, Reference Example 31(l)] and carrying out the reaction for 24 hours, there was prepared 3-ethyl-4-methoxy-phenylamine (2.5g) as a brown oil. LC-MS (METHOD J):  $R_T = 2.04$

15 minutes, 152.2 (M+H)<sup>+</sup>.

#### REFERENCE EXAMPLE 31

(a) 5-Ethyl-2-nitro-aniline

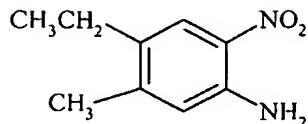


20 A stirred solution of sodium methoxide (0.35 g) in methanol (15 ml) was treated with a solution of 4-ethyl-2-nitro-*N*-acetyl-aniline [1g, Reference Example 32(a)] in methanol (15 ml). The reaction mixture was stirred at room temperature for 24 hours and then poured onto ice-water. The resulting precipitate was filtered and then dried to give 5-ethyl-2-nitro-aniline (650 mg). LC-MS (METHOD B):  $R_T = 3.11$  minutes; 167.2 (M+H)<sup>+</sup>.

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(b) 4-Ethyl-5-methyl-2-nitro-aniline

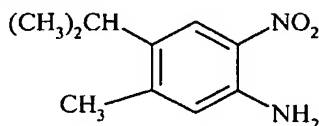
-511-



By proceeding in a manner similar to Reference Example 31(a) above but using 4-ethyl-5-methyl-2-nitro-*N*-acetyl-aniline [1g, Reference Example 32(b)] there was prepared 4-ethyl-5-methyl-2-nitro-aniline as a orange solid. LC-MS (METHOD B):  $R_T = 3.16$  minutes; 181.14 (M+H)<sup>+</sup>.

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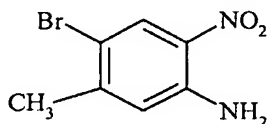
(c) 4-isopropyl-5-methyl-2-nitro-aniline



By proceeding in a manner similar to Reference Example 31(a) above but using 4-isopropyl-5-methyl-2-nitro-*N*-acetyl-aniline [1g, Reference Example 32(c)] there was prepared 4-isopropyl-5-methyl-2-nitro-aniline as an orange solid. LC-MS (METHOD B):  $R_T = 3.26$  minutes; 195.3 (M+H)<sup>+</sup>.

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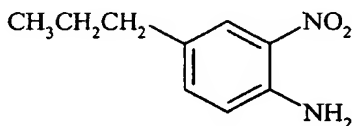
(d) 4-bromo-5-methyl-2-nitro-aniline



By proceeding in a manner similar to Reference Example 31(a) above but using 4-bromo-5-methyl-2-nitro-*N*-acetyl-aniline [1g, Reference Example 32(d)] there was prepared 4-bromo-5-methyl-2-nitro-aniline as a brown solid. LC-MS (METHOD B):  $R_T = 3.24$  minutes; 231.2 (M+H)<sup>+</sup>.

15

(e) 4-n-Propyl-2-nitro-aniline



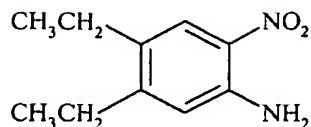
By proceeding in a manner similar to Reference Example 31(a) above but using 2-nitro-4-propyl-*N*-acetyl-aniline there was prepared 4-n-propyl-2-nitro-aniline as an orange solid.

LC-MS (Method C):  $R_T = 3.46$  minutes; 181.2 (M+H)<sup>+</sup>.

20

(f) 4,5-diethyl-2-nitro-aniline

-512-

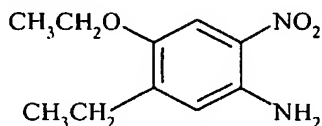


By proceeding in a manner similar to Reference Example 31(a) above but using 4,5-diethyl-2-nitro-*N*-acetyl-aniline [Reference Example 32(f)] there was prepared 4,5-diethyl-2-nitro-aniline.

LC-MS (METHOD B):  $R_T = 3.27$  minutes; 195.22 (M+H)<sup>+</sup>.

5

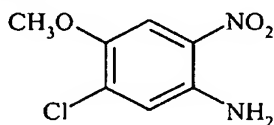
(g) 4-Ethoxy-5-ethyl-2-nitrophenylamine



*N*-(4-Ethoxy-5-ethyl-2-nitrophenyl)acetamide [0.2g, Reference Example 32(g)] was dissolved in ethanol (25 mL) and sodium hydride (100 mg, 50% dispersion in mineral oil, 2 mmol) was added.

- 10 Mixture was stirred overnight at ambient temperature, aq ammonium chloride (3mL) was added and the mixture was evaporated. The residue was chromatographed on silica gel (heptane with gradient of 25-50% ethyl acetate) to give 4-ethoxy-5-ethyl-2-nitrophenylamine (0.1g) as a red solid. LC-MS (Method E):  $R_T = 3.4$  minutes, 211 (M+H)<sup>+</sup>.

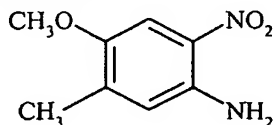
15 (h) 5-Chloro-4-methoxy-2-nitrophenylamine



*N*-(5-Chloro-4-methoxy-2-nitrophenyl)acetamide (8.0g, Reference Example 32(i)) was added to a solution of sodium methoxide (2.0g, 0.037 mole) in methanol (150 mL) and the mixture was stirred at ambient temperature for 4 hours. The reaction mixture was added to ice water (750 mL), stirred for 15

20 minutes and the aqueous mixture was filtered. The precipitate was washed with water and dried at 60°C under vacuum to give 5-chloro-4-methoxy-2-nitrophenylamine (6.52 g) as an orange solid, mp 128-129° C.

(i) 4-Methoxy-5-methyl-2-nitro-phenylamine



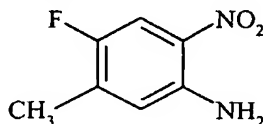
25

By proceeding in a manner similar to Reference Example 31(a) above but using *N*-(4-methoxy-5-



methyl-2-nitro-phenyl)-acetamide [2.53g, Reference Example 32(j)] there was prepared 4-methoxy-5-methyl-2-nitro-phenylamine (2.05g) as a bright orange solid. LC-MS (Method J):  $R_T = 3.46$  minutes, 183.29 (M+H)<sup>+</sup>.

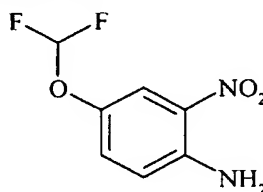
5 (j) 4-Fluoro-5-methyl-2-nitro-phenylamine



By proceeding in a manner similar to Reference Example 31(a) above but using N-(4-fluoro-5-methyl-2-nitro-phenyl)-acetamide [2.53g, Reference Example 32(k)] there was prepared 4-fluoro-5-methyl-2-nitro-phenylamine (2.25g) as an orange solid. LC-MS (METHOD J):  $R_T = 3.53$  minutes, 171.28

10 (M+H)<sup>+</sup>.

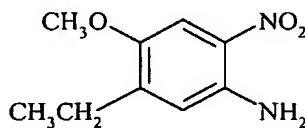
(k) 4-difluoromethoxy-2-nitro-phenylamine



By proceeding in a manner similar to Reference Example 31(a) above but using N-(4-difluoromethoxy-2-nitro-phenyl)-acetamide [Reference Example 32(l)] there was prepared 4-difluoromethoxy-2-nitro-phenylamine (10g) as an orange solid. LC-MS (METHOD N):  $R_T = 3.86$  minutes, 205 (M+H)<sup>+</sup>.

15

(l) 5-Ethyl-4-methoxy-2-nitro-phenylamine



20

By proceeding in a manner similar to Reference Example 31(a) but using N-(5-ethyl-4-methoxy-2-nitro-phenyl)-acetamide [2.4 g, Reference Example 32(m)] there was prepared 5-ethyl-4-methoxy-2-nitro-phenylamine (1.9 g) as a brown solid. LC-MS (METHOD K):  $R_T = 4.14$  minutes, 197.09

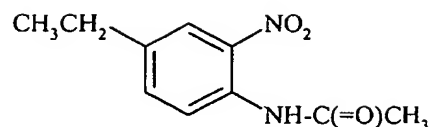
(M+H)<sup>+</sup>.

25

REFERENCE EXAMPLE 32

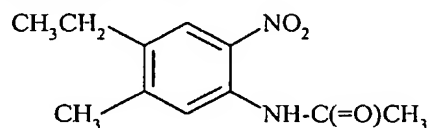
(a) 4-Ethyl-2-nitro-N-acetyl-aniline

-514-



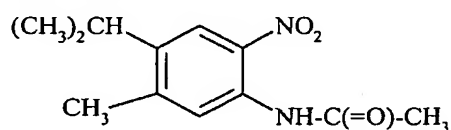
A stirred solution of 4-ethyl-*N*-acetyl-aniline [3g, Reference Example 33(a)] in acetic anhydride (8mL) and acetic acid (4mL), at  $-5^{\circ}\text{C}$ , was treated dropwise with a mixture of acetic acid (1.75mL) and concentrated nitric acid (1.22mL). The mixture was warmed to  $0^{\circ}\text{C}$ , then stirred at  $0^{\circ}\text{C}$  for 2 hours and then poured onto water. This mixture was evaporated and the resulting oil was partitioned between ethyl acetate and water. The organic layer was dried over magnesium sulfate and then evaporated. The residual oil was subjected to flash column chromatography on silica eluting with a mixture of ethyl acetate and petroleum ether (2:5) to give 4-ethyl-2-nitro-*N*-acetyl-aniline (1.4g) as an orange solid. LC-MS (METHOD B):  $R_T = 2.95$  minutes; 209.2 (M+H) $^{+}$ .

10

(b) 4-Ethyl-5-methyl-2-nitro-*N*-acetyl-aniline

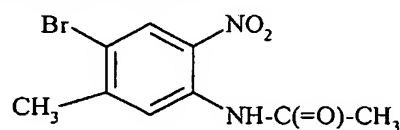
By proceeding in a manner similar to Reference Example 32(a) above but using 3-methyl-4-ethyl-*N*-acetyl aniline there was prepared 4-ethyl-5-methyl-2-nitro-*N*-acetyl-aniline as a orange solid.

15 LC-MS (METHOD B):  $R_T = 3.03$  minutes; 223.25 (M+H) $^{+}$ .

(c) 4-isopropyl-5-methyl-2-nitro-*N*-acetyl-aniline

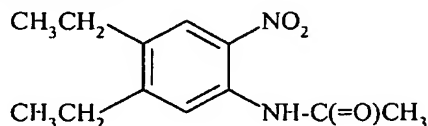
By proceeding in a manner similar to Reference Example 32(a) above but using 3-methyl-4-isopropyl-*N*-acetyl aniline [Reference Example 33(b) ] there was prepared 4-isopropyl-5-methyl-2-nitro-*N*-acetyl-aniline as an orange solid. LC-MS (METHOD B):  $R_T = 3.15$  minutes; 231.36 (M+H) $^{+}$ .

20

(d) 4-Bromo-5-methyl-2-nitro-*N*-acetyl-aniline

By proceeding in a manner similar to Reference Example 32(a) above but using 3-methyl-4-bromo-*N*-acetyl aniline [Reference Example 33(c)] there was prepared 4-bromo-5-methyl-2-nitro-*N*-acetyl-aniline as an orange solid. LC-MS (METHOD B):  $R_T = 3.06$  minutes; 274.2 (M+H)<sup>+</sup>.

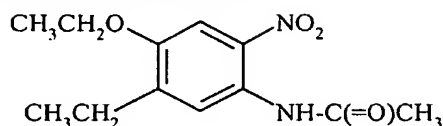
5 (f) 4,5-Diethyl-2-nitro-*N*-acetyl-aniline



By proceeding in a manner similar to Reference Example 32(a) above but using 3,4-diethyl-*N*-acetyl aniline [Reference Example 33(d)] there was prepared 4,5-diethyl-2-nitro-*N*-acetyl-aniline as an orange solid. LC-MS (METHOD B):  $R_T = 3.18$  minutes; 237.4 (M+H)<sup>+</sup>.

10

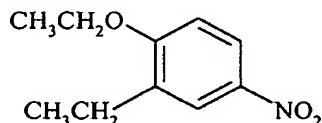
(g) N-(4-Ethoxy-5-ethyl-2-nitrophenyl)acetamide



N-(4-Ethoxy-3-ethyl-phenyl) acetamide [3.1g, Reference Example 33(e)] was dissolved in acetic anhydride (5 mL), a solution of nitric acid in acetic acid (0.5mL of 95% nitric acid, in 4mL) was added and the mixture was stirred overnight at ambient temperature. The mixture was diluted with water (100mL) and the aqueous mixture was extracted twice with ethyl acetate (100mL). The combined extracts were evaporated and the residue was chromatographed on silica gel (heptane/ethyl acetate 9/1) to give N-(4-ethoxy-5-ethyl-2-nitrophenyl)acetamide (3.0 g) as a bright yellow solid. LC-MS (Method E):  $R_T = 3.27$  minutes, 253 (M+H)<sup>+</sup>.

20

(h) 1-Ethoxy-2-ethyl-4-nitrobenzene

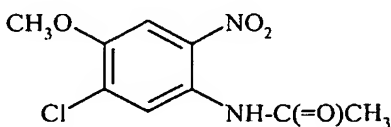


A solution of 1-ethoxy-2-ethyl benzene (3.5g, Reference Example 51) in acetic anhydride (30 mL) was chilled in an ice-water bath. A solution of nitric acid (1.4 mL of 90% - 30% excess) in acetic acid (25 mL) was added dropwise and the mixture was stirred overnight at ambient temperature. The reaction mixture was poured into ice water (300 mL) and the aqueous mixture was extracted with ethyl acetate (2 X 200 mL). The combined extracts were evaporated and the residue was chromatographed on silica

25

gel (heptane with gradient of 5 to 10% ethyl acetate) to give 1-ethoxy-2-ethyl-4-nitrobenzene (1.4 g) as a clear liquid. LC-MS (Method E)  $R_T = 3.75$  minutes, 196 (M+H)<sup>+</sup>.

(i) N-(5-Chloro-4-methoxy-2-nitrophenyl)acetamide

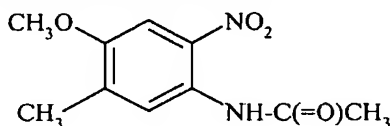


5

A solution of N-(3-chloro-4-methoxyphenyl)acetamide (6.85g, Reference Example ) in a mixture of acetic acid (20 mL) and acetic anhydride (35 mL) was cooled to -5° C and a solution of fuming nitric acid (3 mL) in acetic acid (4 mL) was added dropwise keeping the reaction temperature below 0°C. The mixture was stirred at 0°C for 30 minutes at which point a yellow precipitate developed. After another 1.5 h at 0°C, the mixture was poured into water (100 mL) and the aqueous mixture was vigorously stirred for 15 minutes and filtered. The yellow precipitate was washed with water and dried under vacuum at 60°C to give the product (8.0g) as a yellow solid, mp 152-153° C. MS 245 (M+H)<sup>+</sup>.

10

(j) N-(4-Methoxy-5-methyl-2-nitro-phenyl)-acetamide

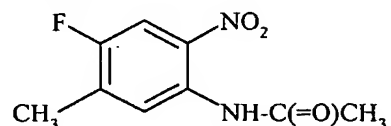


15

By proceeding in a manner similar to Reference Example 32(a) but using N-(4-methoxy-3-methyl-phenyl)-acetamide [2.65g, Reference Example 33(f)] there was prepared N-(4-methoxy-5-methyl-2-nitro-phenyl)-acetamide (2.53g) as a orange solid. LC-MS (Method J):  $R_T = 3.30$  minutes, 225.29 (M+H)<sup>+</sup>, 223.29 (M-H)<sup>-</sup>.

20

(k) N-(4-Fluoro-5-methyl-2-nitro-phenyl)-acetamide

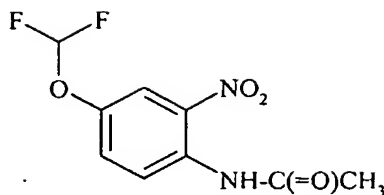


By proceeding in a manner similar to Reference Example 32(a) above but using N-(4-fluoro-3-methyl-phenyl)-acetamide [2.65g, Reference Example 33(g)] there was prepared N-(4-fluoro-5-methyl-2-nitro-phenyl)-acetamide (2.25g) as a yellow solid. LC-MS (METHOD J):  $R_T = 3.31$  minutes, 211.26 (M-H)<sup>-</sup>.

25

(l) N-(4-Difluoromethoxy-2-nitro-phenyl)-acetamide

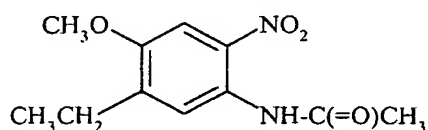
-517-



By proceeding in a manner similar to Reference Example 32(a) above but using N-(4-difluoromethoxy-phenyl)-acetamide [Reference Example 33(h)] there was prepared N-(4-difluoromethoxy-2-nitro-phenyl)-acetamide (450mg) as a yellow solid. LC-MS (METHOD K):

5  $R_T = 3.72$  minutes, MS: 245 (M-H)<sup>-</sup>.

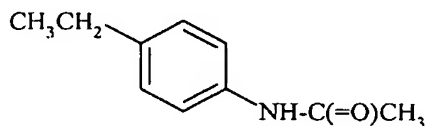
(m) N-(5-Ethyl-4-methoxy-2-nitro-phenyl)-acetamide



10 By proceeding in a manner similar to Reference Example 32(a) but using N-(3-ethyl-4-methoxy-phenyl)-acetamide [2.9 g, Reference Example 33(i)] there was prepared N-(5-Ethyl-4-methoxy-2-nitro-phenyl)-acetamide (2.4 g) as a yellow solid. LC-MS (METHOD K):  $R_T = 4.04$  minutes, MS: 239.16 (M+H)<sup>+</sup>.

#### REFERENCE EXAMPLE 33

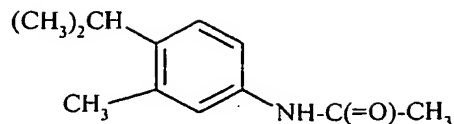
15 (a) 4-Ethyl-N-acetyl-aniline



A stirred solution of 4-ethylaniline (2g) and triethylamine (13.91mL) in dichloromethane (40mL) at 0°C under nitrogen was treated dropwise with acetic anhydride (4.67mL). The mixture was warmed to ambient temperature, then stirred for 16 hours at room temperature, then washed with (i) 10% citric acid (40mL), (ii) water (40mL) and (iii) brine (40mL). The organic phase was dried over magnesium sulfate and then evaporated to give 4-ethyl-N-acetyl-aniline (2.36g) as a pale orange solid which was used without further purification. LC-MS (METHOD B):  $R_T = 2.80$  minutes; 164.2 (M+H)<sup>+</sup>.

(b) 3-Methyl-4-isopropyl-N-acetyl aniline

-518-

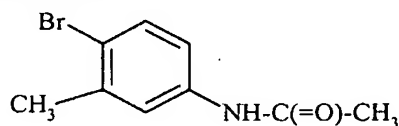


By proceeding in a manner similar to Reference Example 33(a) above but using 3-methyl-4-isopropylaniline there was prepared 3-methyl-4-isopropyl-N-acetyl aniline as an orange solid.

LC-MS (METHOD B):  $R_T = 2.97$  minutes; 192.3 (M+H)<sup>+</sup>.

5

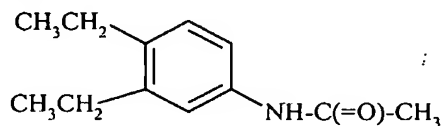
(c) 3-Methyl-4-bromo-N-acetyl aniline



By proceeding in a manner similar to Reference Example 33(a) above but using 3-methyl-4-bromoaniline there was prepared 3-methyl-4-bromo-N-acetyl aniline as a brown solid.

10 LC-MS (METHOD B):  $R_T = 2.88$  minutes; 228.12 (M+H)<sup>+</sup>.

(d) 3,4-Diethyl-N-acetyl aniline

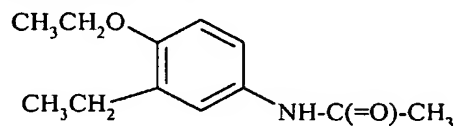


By proceeding in a manner similar to Reference Example 33(a) above but using 3,4-diethylaniline there was prepared 3,4-diethyl-N-acetyl aniline which was used without further purification.

15

LC-MS (METHOD B):  $R_T = 3.03$  minutes; 192.30 (M+H)<sup>+</sup>.

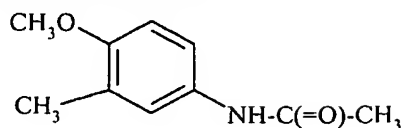
(e) N-(4-Ethoxy-3-ethyl-phenyl) acetamide



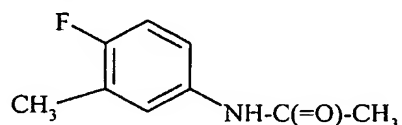
20

To a solution of 4-ethoxy-3-ethyl-phenylamine [0.6 g, Reference Example 30(t)] in pyridine (5mL) was added acetic anhydride (1mL) and the mixture was stirred 18 hours at ambient temperature. The reaction mixture was diluted with water (100mL) and the aqueous mixture was extracted twice with ethyl acetate (100mL). The combined extracts were evaporated to give N-(4-ethoxy-3-ethyl-phenyl)

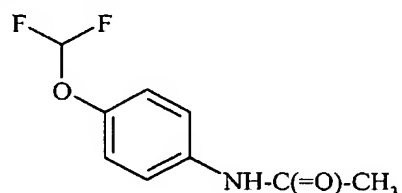
25 acetamide (0.6g) as a pink foam. GC-MS one peak,  $R_T = 9.16$  minutes, MS 207 (M)<sup>+</sup>.

(f) N-(4-Methoxy-3-methyl-phenyl)-acetamide

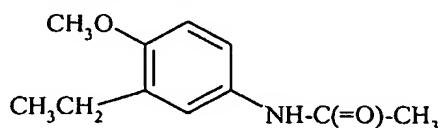
By proceeding in a manner similar to Reference Example 33(a) above but using 4-methoxy-3-methyl-phenylamine (2.07g, Reference Example 30(u)) and subjecting the reaction product to flash chromatography on silica eluting with a mixture of ethyl acetate and n-pentane (1:1, v/v) there was prepared N-(4-methoxy-3-methyl-phenyl)-acetamide (2.65g) as a pale pink crystalline solid. LC-MS (Method J):  $R_T = 2.94$  minutes, 180.30 (M+H)<sup>+</sup>.

(g) N-(4-Fluoro-3-methyl-phenyl)-acetamide

By proceeding in a manner similar to Reference Example 33(a) above but using 4-fluoro-3-methylaniline there was prepared N-(4-fluoro-3-methyl-phenyl)-acetamide (3.82 g) as an orange solid. LC-MS (METHOD J):  $R_T = 3.08$  minutes, 168.24 (M+H)<sup>+</sup>.

(h) N-(4-Difluoromethoxy-phenyl)-acetamide

By proceeding in a manner similar to Reference Example 33(a) above but using 4-difluoromethoxyaniline there was prepared N-(4-difluoromethoxy-phenyl)-acetamide (5.90 g) as an orange solid. LC-MS (METHOD K):  $R_T = 3.62$  minutes, 202 (M+H)<sup>+</sup>.

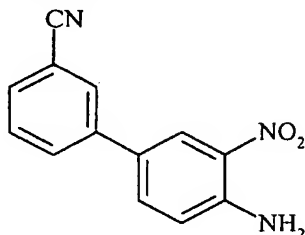
(i) N-(3-Ethyl-4-methoxy-phenyl)-acetamide

By proceeding in a manner similar to Reference Example 33(a) but using 3-ethyl-4-methoxy-phenylamine [2.5g, Reference Example 30(aa)] there was prepared N-(3-ethyl-4-methoxy-phenyl)-

acetamide ( 2.9 g) was prepared as a light brown solid. LC-MS (METHOD K):  $R_T = 3.92$  minutes, 194.16 (M+H)<sup>+</sup>.

REFERENCE EXAMPLE 34

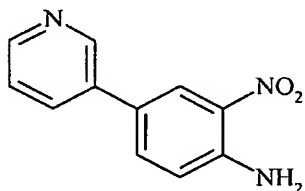
5 (a) 4'-Amino-3'-nitro-biphenyl-3-carbonitrile



A stirred solution of 3-cyanophenyl boronic acid (812mg) and tetrakis(triphenylphosphine) palladium (150mg) in tetrahydrofuran (4mL) under at atmosphere of nitrogen was treated with 4-bromo-2-nitroaniline in tetrahydrofuran (10mL). The reaction mixture was heated at 85°C for 48 hours, then  
10 cooled to ambient temperature and then partitioned between ethyl acetate and water. The organic layer was washed with brine, then dried over magnesium sulfate and then evaporated. The residue was subjected to flash column chromatography on silica eluting with a mixture of ethyl acetate and hexane (1:2,v/v) to give 4'-amino-3'-nitro-biphenyl-3-carbonitrile (224mg) as a yellow solid. LC-MS (METHOD B):  $R_T = 3.21$  minutes, 240.3 (M+H)<sup>+</sup>.

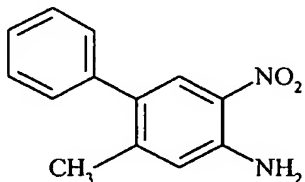
15

(b) 2-nitro-4-pyridine-3-yl-phenylamine



By proceeding in a manner similar to Reference Example 34(a) above but using pyridine-3-boronic acid there was prepared 2-nitro-4-pyridine-3-yl-phenylamine as a yellow solid. LC-MS (METHOD B):  
20  $R_T = 2.09$  minutes, 216.24 (M+H)<sup>+</sup>.

(c) 2-methyl-5-nitro-biphenyl-4-yl amine



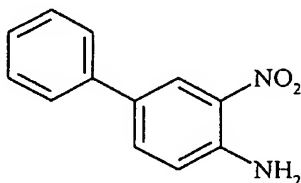


By proceeding in a manner similar to Reference Example 34(a) above but using phenyl boronic acid and 4-bromo-5-methyl-2-nitro-aniline [Reference Example 31(d)] there was prepared 2-methyl-5-nitro-biphenyl-4-yl amine as an orange solid. LC-MS (METHOD B):  $R_T = 3.30$  minutes, MS: 229.23

(M+H)<sup>+</sup>.

5

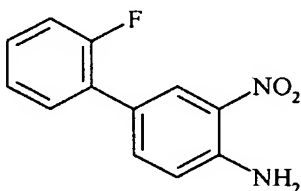
(d) 3-nitrophenyl-4-ylamine



By proceeding in a manner similar to Reference Example 34(a) above but using phenyl boronic acid there was prepared 3-nitrophenyl-4-ylamine as a red solid. LC-MS (METHOD B):  $R_T = 3.43$  minutes,

10 215.06 (M+H)<sup>+</sup>.

(e) 2'-fluoro-3-nitro-biphenyl-4-ylamine

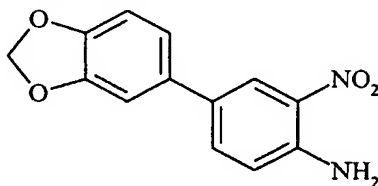


By proceeding in a manner similar to Reference Example 34(a) above but using 2-fluorophenyl boronic acid there was prepared 2'-fluoro-3-nitro-biphenyl-4-ylamine as a red solid. LC-MS (METHOD B):

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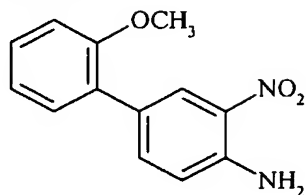
$R_T = 3.33$  minutes, 233.3 (M+H)<sup>+</sup>.

(f) 4'-benzo[1,3]dioxo-5-yl-2-nitrophenylamine



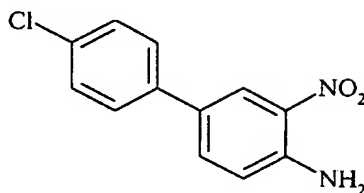
20 By proceeding in a manner similar to Reference Example 34(a) above but using 3,4-methylenedioxyphenyl boronic acid there was prepared 4'-benzo[1,3]dioxo-5-yl-2-nitrophenylamine as a orange solid. LC-MS (METHOD B):  $R_T = 3.23$  minutes, 259.3 (M+H)<sup>+</sup>.

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(g) 2'-methoxy-3-nitro-biphenyl-4-ylamine

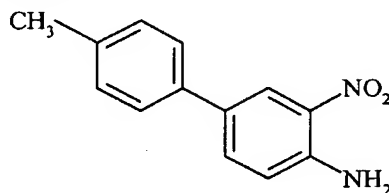
By proceeding in a manner similar to Reference Example 34(a) above but using 2-methoxyphenyl boronic acid there was prepared 2'-methoxy-3-nitro-biphenyl-4-ylamine as an orange solid. LC-MS

5 (METHOD B):  $R_T = 3.30$  minutes, 245.3 (M+H)<sup>+</sup>.

(h) 4'-chloro-3-nitro-biphenyl-4-ylamine

By proceeding in a manner similar to Reference Example 34(a) above but using 4-chlorophenyl boronic acid there was prepared 4'-chloro-3-nitro-biphenyl-4-ylamine as an orange solid. LC-MS

10 (METHOD B):  $R_T = 3.45$  minutes, 249.27 (M+H)<sup>+</sup>.

(i) 4'-methyl-3-nitro-biphenyl-4-ylamine

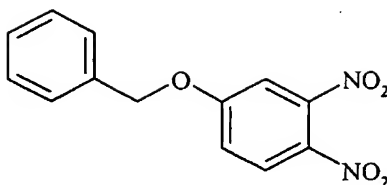
15 By proceeding in a manner similar to Reference Example 34(a) above but using 4-methylphenyl boronic acid there was prepared 4'-methyl-3-nitro-biphenyl-4-ylamine as an orange solid. LC-MS

(METHOD B):  $R_T = 3.33$  minutes, 229.2 (M+H)<sup>+</sup>.

REFERENCE EXAMPLE 35

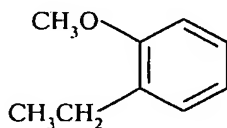
20 (a) 4-benzyloxy-1,2-dinitrobenzene

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A stirred solution of 3,4-dinitrophenol (1g) in dimethylformamide (30mL) was treated with benzyl bromide (723 $\mu$ L) and potassium carbonate (1.13g). The reaction mixture was stirred at ambient temperature for 24 hours and then partitioned between ethyl acetate and water. The organic layer was washed with brine, then dried over magnesium sulfate and then evaporated. The residue was subjected to flash column chromatography on silica eluting with a mixture of ethyl acetate and hexane (1:4, v/v) to give 4-benzyloxy-1,2-dinitrobenzene (1.30g) as a yellow solid. LC-MS (METHOD B):  $R_T = 3.31$  minutes.  $^1\text{H}$  NMR [(CD<sub>3</sub>)<sub>2</sub>CO, ppm):  $\delta$  5.28 (s, 2H), 7.26-7.42 (m, 6H), 7.57 (d, 1H), 8.12 (d, 1H).

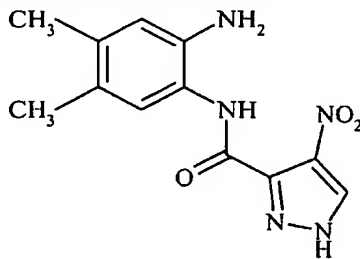
10 (b) 1-Ethyl-2-methoxy-benzene



By proceeding in a manner similar to Reference Example 35(a) above, but using 2-ethylphenol (5ml) and iodomethane (2.6 ml) with acetone as solvent and heating at 70°C for 24 hours in a sealed pressure vessel, there was prepared 1-ethyl-2-methoxy-benzene (5.6 g) as a yellow oil which was used without future purification. LC-MS (METHOD K):  $R_T = 3.83$  minutes.  $^1\text{H}$  NMR ( $d_6$  acetone) :  $\delta$  6.95 (m, 2H), 6.75 (d, 1H), 6.68 (t, 1H), 3.67 (s, 3H), 2.44 (q, 2H) 0.95 (t, 3H).

REFERENCE EXAMPLE 36

(a) 4-Nitro-1H-pyrazole-3-carboxylic acid (2-amino-4,5-dimethylphenyl)amide



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Method A A stirred solution of 4,5-dimethylphenylenediamine (4.32g) and diisopropylethylamine (30ml) in dichloromethane (200ml) was treated with 4-nitropyrazole-3-carboxylic chloride (5g) portionwise at 0°C. The reaction mixture was warmed to ambient temperature and stirred for 30 minutes. The solvent was removed *in vacuo* and the oily residue was partitioned between ethyl acetate

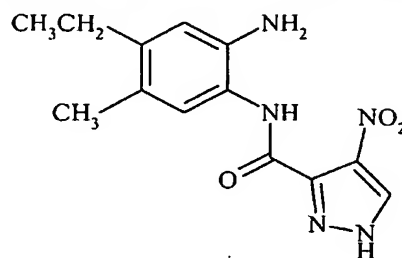
and water. The organic layer was dried over magnesium sulfate and concentrated. The residual oil was re-crystallised from ethyl acetate and methanol (10%) to give 4-nitro-1H-pyrazole-3-carboxylic acid (2-amino-4,5-dimethylphenyl)amide (6.58g) as an orange solid. LC-MS (METHOD B):  $R_T$  = 2.36 minutes, 276.09 (M+H)<sup>+</sup>.

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**Method B** Polyphosphoric acid (500g) was added to a 1 L flask equipped with an overhead stirrer and heated to 70°C under nitrogen. A blended mixture of 4-nitro-3-pyrazole carboxylic acid (50g) and 1,2-diamino-4,5-dimethylbenzene (43.4g) was added and the mixture was heated to 180°C. After 1 hour at this temperature the reaction mixture was cooled to 130°C and poured into ice water (2.5kg).

- 10 This mixture was stirred with an overhead stirrer and then treated with aqueous ammonium hydroxide (350mL, 30%) until the pH was 2.1. After stirring for a further 15 minutes the mixture was filtered and the filtered solid was washed three times with water (200mL) then dried under vacuum to give 4-nitro-1H-pyrazole-3-carboxylic acid (2-amino-4,5-dimethylphenyl)amide as a brown solid.

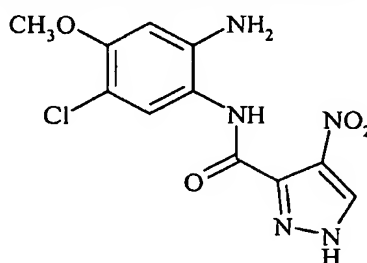
- 15 (b) 4-Nitro-1H-pyrazole-3-carboxylic acid (2-amino-4-ethyl-5-methylphenyl)amide



By proceeding in a manner similar to Reference Example 36(a), Method A, above but using 4-ethyl-5-methyl-phenylene diamine [Reference Example 30(a)] there was prepared 4-nitro-1H-pyrazole-3-carboxylic acid (2-amino-4-ethyl-5-methylphenyl)amide as a dark red solid. LC-MS (METHOD B):

- 20  $R_T$  = 2.89 minutes, 290.24 (M+H)<sup>+</sup>.

- (c) 4-Nitro-1H-pyrazole-3-carboxylic acid (2-amino-5-chloro-4-methoxyphenyl)amide

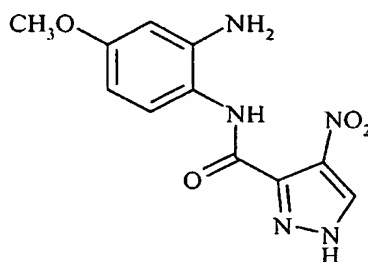


By proceeding in a manner similar to Reference Example 36(a), Method A, above but using 4-chloro-5-methoxybenzene-1,2-diamine [1g, Reference Example 49(b)], diisopropylethylamine (4.1mL, 4 eq),

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dichloromethane (50 mL) and a solution of 4-nitropyrazole-3-carbonyl chloride (1g, 5.8 mmol) in dichloromethane (25 mL) and stirring the reaction mixture at ambient temperature for 18 hours there was prepared a mixture of 4-nitro-1H-pyrazole-3-carboxylic acid (2-amino-5-chloro-4-methoxyphenyl)amide and the bis-acylated material, MS 310 (M<sup>+</sup>) and 449 (M<sup>+</sup>). This material was used without further purification in Example 20(c).

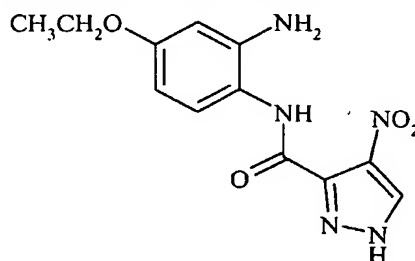
(d) 4-Nitro-1H-pyrazole-3-carboxylic acid (2-amino-4-methoxy-phenyl)-amide



By proceeding in a manner similar to Reference Example 36(a), Method A, above but using 4-methoxy-1,2-phenylenediamine (880mg) and 4-nitropyrazole-3-carboxylic chloride [prepared by treating a solution of 4-nitropyrazole-3-carboxylic acid (1g) in dry dichloromethane (70ml) under nitrogen with oxalyl chloride (1.1 ml) and dimethylformamide and after stirring overnight evaporating the reaction mixture then azeotrope three times with toluene (10ml)] there was prepared 4-nitro-1H-pyrazole-3-carboxylic acid (2-amino-4-methoxy-phenyl)-amide (800mg). LC-MS (Method J): R<sub>T</sub> =

2.67 minutes, 278.25 (M+H)<sup>+</sup>, 276.28 (M-H)<sup>-</sup>.

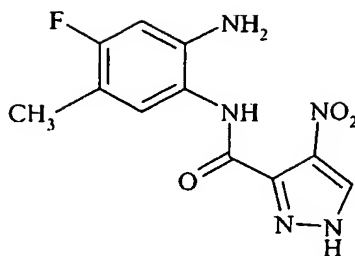
(e) 4-Nitro-1H-pyrazole-3-carboxylic acid (2-amino-4-ethoxy-phenyl)-amide



By proceeding in a manner similar to Reference Example 36(d) above but using 4-ethoxy-benzene-1,2-diamine [1.25g, Reference Example 30(v)] and subjecting the reaction product to flash chromatography on silica, eluting initially with ethyl acetate and then with a mixture of ethyl acetate and methanol (9:1, v/v), there was prepared 4-nitro-1H-pyrazole-3-carboxylic acid (2-amino-4-ethoxy-phenyl)-amide (824mg) a black solid. LC-MS (Method J): R<sub>T</sub> = 2.90 minutes, 292.27 (M+H)<sup>+</sup>, 290.30 (M-H)<sup>-</sup>.

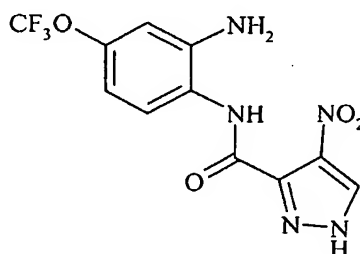
(f) 4-Nitro-1H-pyrazole-3-carboxylic acid (2-amino-4-fluoro-5-methyl-phenyl)-amide

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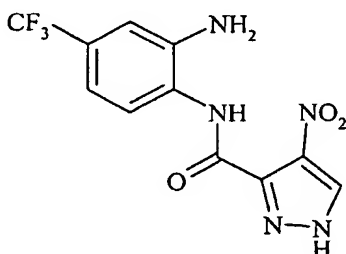
By proceeding in a manner similar to Reference Example 36(d) above but using 4-fluoro-5-methyl-benzene-1,2-diamine [Reference Example 30(w)] there was prepared 4-nitro-1H-pyrazole-3-carboxylic acid (2-amino-4-fluoro-5-methyl-phenyl)-amide (2.12g) as a red oil. LC-MS (METHOD J):  $R_T = 3.02$  minutes,  $280.25 (M+H)^+$ .

(g) 4-Nitro-1H-pyrazole-3-carboxylic acid (2-amino-4-trifluoromethoxy-phenyl)-amide

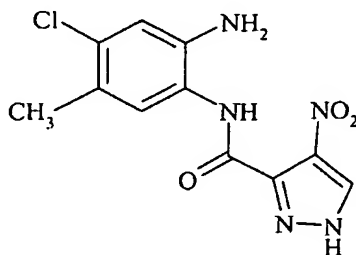


By proceeding in a manner similar to Reference Example 36(d) above but using 4-trifluoromethoxy-benzene-1,2-diamine [Reference Example 30(x)] there was prepared 4-nitro-1H-pyrazole-3-carboxylic acid (2-amino-4-trifluoromethoxy-phenyl)-amide (0.850g) as a red solid. LC-MS (METHOD J):  $R_T = 3.34$  minutes,  $332.21 (M+H)^+$ .

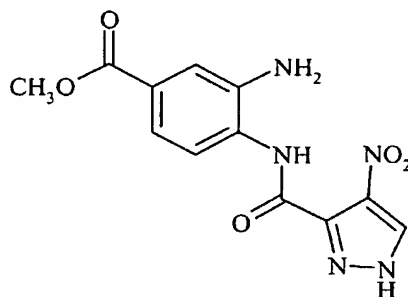
(h) 4-Nitro-1H-pyrazole-3-carboxylic acid (2-amino-4-trifluoromethyl-phenyl)-amide



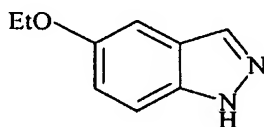
By proceeding in a manner similar to Reference Example 36(d) above but using 4-trifluoromethyl-benzene-1,2-diamine [Reference Example 30(y)] there was prepared 4-nitro-1H-pyrazole-3-carboxylic acid (2-amino-4-trifluoromethyl-phenyl)-amide (0.250g) as an red solid. LC-MS (METHOD B):  $R_T = 3.35$  minutes,  $316.14 (M+H)^+$ .

(i) 4-Nitro-1H-pyrazole-3-carboxylic acid (2-amino-4-chloro-5-methyl-phenyl)-amide

By proceeding in a manner similar to Reference Example 36(d) above but using 4-chloro-5-methyl-benzene-1,2-diamine there was prepared 4-nitro-1H-pyrazole-3-carboxylic acid (2-amino-4-chloro-5-methyl-phenyl)-amide (0.300g) as a yellow solid. LC-MS (METHOD B):  $R_T = 2.72$  minutes, 296.10 (M+H)<sup>+</sup>.

(j) 3-Amino-4-[(4-nitro-1H-pyrazole-3-carbonyl)-amino]-benzoic acid methyl ester

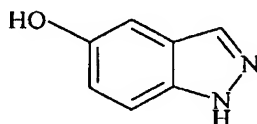
By proceeding in a manner similar to Reference Example 36(d) above but using methyl-3,4-diaminobenzoate there was prepared 3-amino-4-[(4-nitro-1H-pyrazole-3-carbonyl)-amino]-benzoic acid methyl ester (2.51g) as a tan foam solid. LC-MS (METHOD B):  $R_T = 2.83$  minutes, 306.21 (M+H)<sup>+</sup>.

REFERENCE EXAMPLE 375-Ethoxy-1H-indazole

A solution of 5-hydroxy-1H-indazole[0.5g, Reference Example 38] in acetone (10ml) was treated with potassium carbonate (2.56g) then with iodoethane (0.296ml). The mixture was refluxed for 4 hours then cooled and then evaporated. The residue was partitioned between ethyl acetate and water and the aqueous layer was further extracted twice with ethyl acetate. The combined organic fractions were dried over magnesium sulfate and then evaporated to yield a brown residue which was subjected to

flash column chromatography on silica eluting with a mixture of ethyl acetate and hexane (1:1, v/v) to give 5-ethoxy-1H-indazole (0.38g) as an off-white solid. LC-MS (METHOD B):  $R_T=2.68$  minutes; 163 (M+H)<sup>+</sup>.

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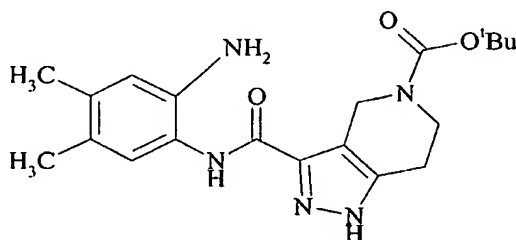
REFERENCE EXAMPLE 385-Hydroxy-1H-indazole

A solution of 5-methoxy-1H-indazole [0.410g, Reference Example 24(a)] in dichloromethane (7.5ml) was treated with a solution of boron tribromide in dichloromethane (7.5ml, 1M). The mixture was then heated to reflux for 4 hours, then cooled to 0°C and then treated dropwise with water (2ml). The pH of this mixture was adjusted to 7-8 by addition of 10% aqueous sodium hydrogen carbonate. The mixture was then extracted three times with ethyl acetate. The combined extracts were dried over magnesium sulfate and then evaporated. The residual brown oil was subjected to flash column chromatography on silica eluting with a mixture of ethyl acetate and hexane (1:1, v/v) to give 5-hydroxy-1H-indazole

(0.310g) as a yellow solid. LC-MS (METHOD B):  $R_T=1.96$  minutes; 135 (M+H)<sup>+</sup>.

REFERENCE EXAMPLE 39

(a) 1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-3,5-dicarboxylic acid, 3-(2-amino-4,5-dimethylphenyl)amide, 5-tert-butyl ester



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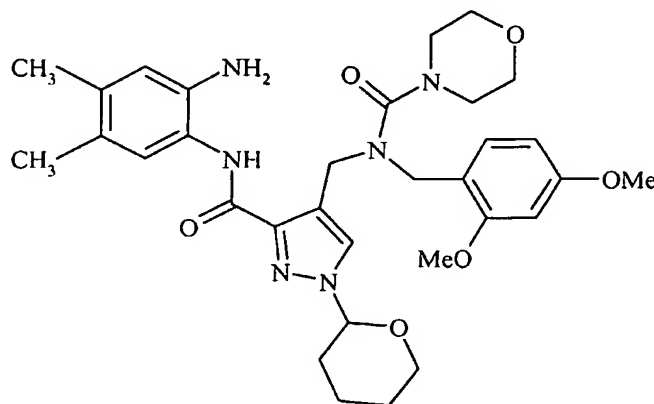
To a solution of 4,5-dimethylbenzene-1,2-diamine (0.841g) and 1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-3,5-dicarboxylic acid 5-tert-butyl ester [1.5g, Reference Example 40(a)] in dimethyl formamide (100ml) was added diisopropylethylamine (1.08ml) and 2-(1H-9-azabenzotriazole-1-yl)-1,1,3,3-tetramethyluronium hexafluorophosphate (2.35g). The mixture was stirred for 1.5 hours and diluted with ethyl acetate then washed six times with brine. The organic layer was dried over magnesium sulfate and concentrated in vacuo to yield a pale brown solid. The solid was then triturated with methanol to yield 1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-3,5-dicarboxylic acid, 3-(2-amino-4,5-dimethylphenyl)amide, 5-tert-butyl ester (0.99g) as an off-white solid.

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LC-MS (METHOD B):  $R_T = 2.94$  minutes;  $386 (M+H)^+$ .

- (b) Morpholine-4-carboxylic acid [3-(2-amino-4,5-dimethyl-phenylcarbamoyl)-1-(tetrahydro-pyran-2-yl)-1H-pyrazol-4-ylmethyl]-(2,4-dimethoxy-benzyl)-amide

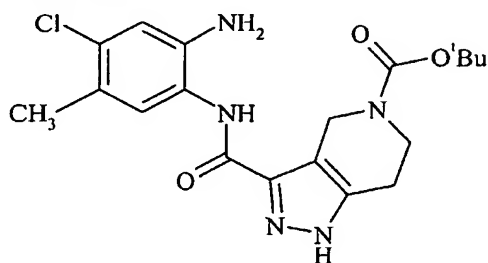


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By proceeding in a manner similar to Reference Example 39(a) above but using 4-{{(2,4-dimethoxy-benzyl)-(morpholine-4-carbonyl)-amino}-methyl}-1-(tetrahydro-pyran-2-yl)-1H-pyrazole-3-carboxylic acid [534mg, Reference Example 40(b)] there was prepared morpholine-4-carboxylic acid [3-(2-amino-4,5-dimethyl-phenylcarbamoyl)-1-(tetrahydro-pyran-2-yl)-1H-pyrazol-4-ylmethyl]-(2,4-dimethoxy-

- 10 benzyl)-amide (1.66g) as a yellow oil. LC-MS (METHOD B):  $R_T = 2.81$  minutes,  $607.71 (M+H)^+$ .

- (c) 3-(2-Amino-4-chloro-5-methyl-phenylcarbamoyl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid tert-butyl ester

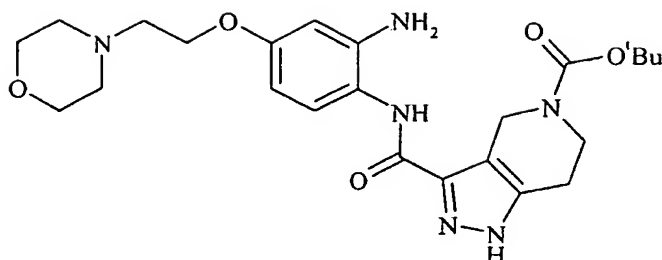


- 15 By proceeding in a manner similar to Reference Example 39(a) above but using 4-chloro-5-methyl-1,2-phenylenediamine there was prepared 3-(2-amino-4-chloro-5-methyl-phenylcarbamoyl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid tert-butyl ester (411mg) as a brown solid.

LC-MS (METHOD J):  $R_T = 3.66$  minutes,  $406/408 (M+H)^+$ .

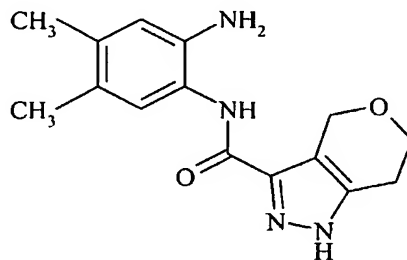
- 20 (d) 3-[2-Amino-4-(2-morpholin-4-yl-ethoxy)-phenylcarbamoyl]-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid tert-butyl ester

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By proceeding in a manner similar to Reference Example 39(a) above but using 4-(2-morpholin-4-yl-ethoxy)-benzene-1,2-diamine [Reference Example 29(c)] there was prepared 3-[2-amino-4-(2-morpholin-4-yl-ethoxy)-phenylcarbamoyl]-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid tert-butyl ester (400mg) as a brown solid. LC-MS (METHOD N):  $R_T = 3.33$  minutes, 485.18 (M-H)<sup>-</sup>.

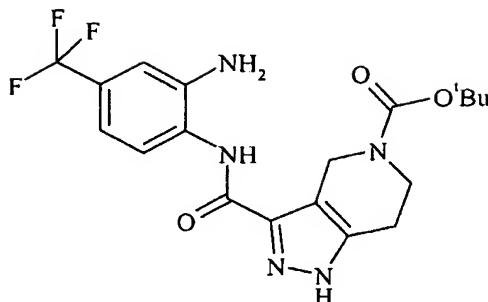
(e) 1,4,6,7-Tetrahydro-pyrano[4,3-c]pyrazole-3-carboxylic acid (2-amino-4,5-dimethyl-phenyl)-amide



By proceeding in a manner similar to Reference Example 39(a) above but using 1,4,6,7-tetrahydro-pyrano[4,3-c]pyrazole-3-carboxylic acid [Reference Example 17(e)] there was prepared 1,4,6,7-tetrahydro-pyrano[4,3-c]pyrazole-3-carboxylic acid (2-amino-4,5-dimethyl-phenyl)-amide (116mg) as a cream solid. LC-MS (METHOD B):  $R_T = 2.32$  minutes, 287 (M+H)<sup>+</sup>.

(f) 3-(2-Amino-4-trifluoromethyl-phenylcarbamoyl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid tert-butyl ester

-531-

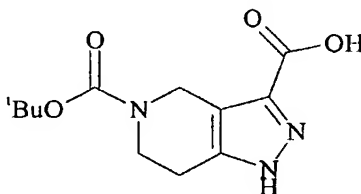


By proceeding in a manner similar to Reference Example 39(a) above but using 4-trifluoromethyl-1,2-phenylenediamine there was prepared 3-(2-amino-4-trifluoromethyl-phenylcarbamoyl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid tert-butyl ester (1.00g) as a brown solid. LC-MS

5 (METHOD N):  $R_T = 3.75$  minutes, 424.10 (M-H)<sup>-</sup>.

#### REFERENCE EXAMPLE 40

(a) 1,4,6,7-Tetrahydro-pyrazolo[4,3-c]pyridine-3,5-dicarboxylic acid 5-tert-butyl ester

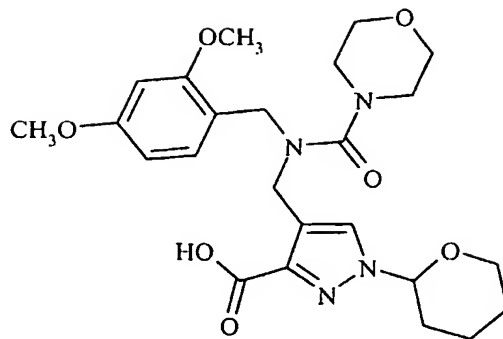


10 A solution of 1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-3,5-dicarboxylic acid 5-tert-butyl ester 3-ethyl ester [5.105g, Reference Example 18(d)] and lithium hydroxide monohydrate (0.870g) in methanol (30ml) and water (10ml) was stirred at 55°C for 2.5 hours. The mixture was acidified with saturated aqueous potassium hydrogen sulfate solution and extracted three times with ethyl acetate. The organic extracts were combined, dried over magnesium sulfate and concentrated *in vacuo* to yield 1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-3,5-dicarboxylic acid 5-tert-butyl ester (4.442g) as a pale yellow

15 solid. MS: 268 (M+H)<sup>+</sup>. HPLC (METHOD G):  $R_T = 2.86$  minutes.

(b) 4-[(2,4-dimethoxy-benzyl)-(morpholine-4-carbonyl)-amino]-methyl}-1-(tetrahydro-pyran-2-yl)-1H-pyrazole-3-carboxylic acid

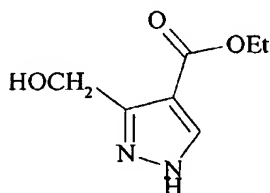
-532-



By proceeding in a manner similar to Reference Example 40(a) above but using 4-{{(2,4-dimethoxy-benzyl)-(morpholine-4-carbonyl)-amino]-methyl}-1-(tetrahydro-pyran-2-yl)-1H-pyrazole-3-carboxylic acid ethyl ester [594mg, Reference Example 48(i)] there was prepared 4-{{(2,4-dimethoxy-benzyl)-(morpholine-4-carbonyl)-amino]-methyl}-1-(tetrahydro-pyran-2-yl)-1H-pyrazole-3-carboxylic acid (534mg) as a white fluffy solid. LC-MS (Method B):  $R_T = 2.71$  minutes, 489.21 (M+H)<sup>+</sup>.

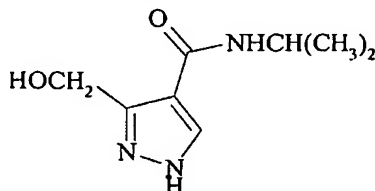
#### REFERENCE EXAMPLE 41

##### (a) 3-Hydroxymethyl-1H-pyrazole-4-carboxylic acid ethyl ester



A solution of 3-*tert*-butoxymethyl-1H-pyrazole-4-carboxylic acid ethyl ester [3.46g, Reference Example 42] in dichloromethane (25ml) was treated with trifluoroacetic acid (25ml). The mixture was stirred for 1.5 hours and then concentrated. The residue was partitioned between saturated sodium carbonate solution and ethyl acetate. The organic layer was dried over magnesium sulfate and then evaporated to give 3-hydroxymethyl-1H-pyrazole-4-carboxylic acid ethyl ester (2.49g) as a brown solid which was used without further purification. LC-MS (METHOD B):  $R_T = 2.54$  minutes; 171 (M+H)<sup>+</sup>.

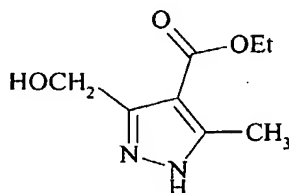
##### (b) 3-Hydroxymethyl-1H-pyrazole-4-carboxylic acid isopropylamide



By proceeding in a manner similar to Reference Example 41(a) above but using 3-*tert*-butoxymethyl-1H-pyrazole-4-carboxylic acid isopropylamide [Reference Example 44(a)] there was prepared

3-hydroxymethyl-1H-pyrazole-4-carboxylic acid isopropylamide as a pale yellow solid, which was used without further purification. LC-MS (METHOD B):  $R_T = 2.43$  minutes; 184 (M+H)<sup>+</sup>.

(c) 3-Hydroxymethyl-5-methyl-1H-pyrazole-4-carboxylic acid ethyl ester

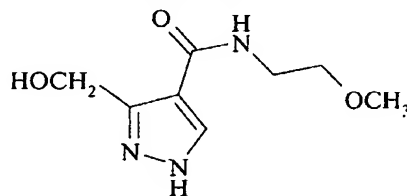


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By proceeding in a manner similar to Reference Example 41(a) above but using 3-*tert*-butoxymethyl-5-methyl-1H-pyrazole-4-carboxylic acid ethyl ester [Reference Example 43] there was prepared 3-hydroxymethyl-5-methyl-1H-pyrazole-4-carboxylic acid ethyl ester as an orange solid which was used without further purification. LC-MS (METHOD B):  $R_T = 2.58$  minutes; 185 (M+H)<sup>+</sup>.

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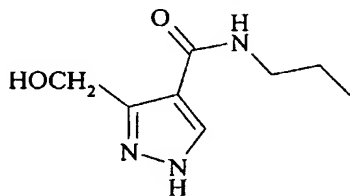
(d) 3-Hydroxymethyl-1H-pyrazole-4-carboxylic acid (2-methoxy-ethyl)-amide



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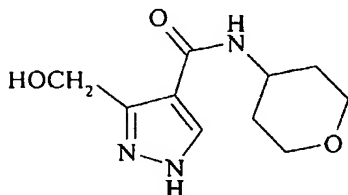
By proceeding in a manner similar to Reference Example 41(a) above but using 3-*tert*-butoxymethyl-1H-pyrazole-4-carboxylic acid (2-methoxy-ethyl)-amide [Reference Example 44(b)] there was prepared 3-hydroxymethyl-1H-pyrazole-4-carboxylic acid (2-methoxy-ethyl)-amide (398mg) as an orange oil. LC-MS (METHOD B):  $R_T = 1.66$  minutes, 222 (M+Na)<sup>+</sup>.

(e) 3-Hydroxymethyl-1H-pyrazole-4-carboxylic acid propylamide

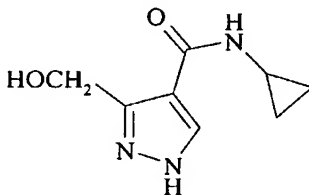


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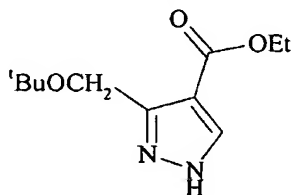
By proceeding in a manner similar to Reference Example 41(a) above but using 3-*tert*-butoxymethyl-1H-pyrazole-4-carboxylic acid propylamide [Reference Example 44(c)] there was prepared 3-hydroxymethyl-1H-pyrazole-4-carboxylic acid propylamide (731mg) as an orange oil. LC-MS (METHOD B):  $R_T = 2.09$  minutes, 206 (M+Na)<sup>+</sup>.

(f) 3-Hydroxymethyl-1H-pyrazole-4-carboxylic acid (tetrahydro-pyran-4-yl)-amide

By proceeding in a manner similar to Reference Example 41(a) above but using 3-*tert*-butoxymethyl-1H-pyrazole-4-carboxylic acid (tetrahydro-pyran-4-yl)-amide [Reference Example 44(d)] there was prepared 3-hydroxymethyl-1H-pyrazole-4-carboxylic acid (tetrahydro-pyran-4-yl)-amide (4.10g) as an orange oil. LC-MS (METHOD N):  $R_T = 1.89$  minutes,  $226(M+H)^+$ .

(g) 3-Hydroxymethyl-1H-pyrazole-4-carboxylic acid cyclopropylamide

By proceeding in a manner similar to Reference Example 41(a) above but using 3-*tert*-butoxymethyl-1H-pyrazole-4-carboxylic acid cyclopropylamide [Reference Example 44(e)] there was prepared 3-hydroxymethyl-1H-pyrazole-4-carboxylic acid cyclopropylamide (2.48g) as a white foam. LC-MS (METHOD N):  $R_T = 1.85$  minutes,  $180.15 (M-H)^-$ .

REFERENCE EXAMPLE 423-*tert*-Butoxymethyl-1H-pyrazole-4-carboxylic acid ethyl ester

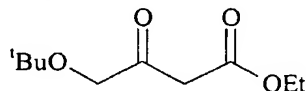
A solution of dimethyl formamide acetal (3.47ml) and 4-*tert*-butoxy-3-oxo-butyric acid ethyl ester [3.52g, Reference Example 43] in toluene (50ml) was heated at 65°C for 2 hours. The mixture was then concentrated and the residue redissolved in acetic acid (3ml). To the mixture was added hydrazine hydrate (0.93ml) and the whole allowed to stir at ambient temperature for 2 hours. The mixture was again concentrated *in vacuo* and the residue partitioned between ethyl acetate and 5% aqueous sodium hydrogen carbonate solution. The organic layer was dried over magnesium sulfate and

then concentrated to yield a brown oil which was subjected to flash column chromatography on silica eluting with a mixture of ethyl acetate and petrol (3:7, v/v) to give 3-*tert*-butyloxymethyl-1H-pyrazole-4-carboxylic acid ethyl ester (3.46g) as a yellow solid. LC-MS (METHOD B):  $R_T = 2.79$  minutes; 227 (M+H)<sup>+</sup>.

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#### REFERENCE EXAMPLE 43

##### 4-*tert*-Butoxy-3-oxo-butyric acid ethyl ester

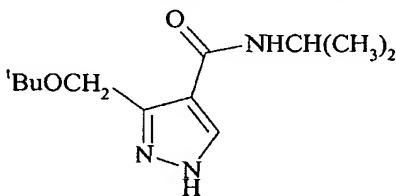


A suspension of sodium hydride (4.44g, 60% dispersion in mineral oil) in dimethyl formamide (50ml), at 0°C, was treated dropwise with ethyl-4-chloroacetoacetate (5ml) and then with *tert*-butyl alcohol (7.08ml). This mixture was maintained at 0°C for 2 hours, then a further 2 hours at ambient temperature and then poured onto 2N hydrochloric acid/ice and then extracted four times with ethyl acetate. The combined extracts were washed with saturated aqueous sodium hydrogen carbonate solution, then with water, then with brine, then dried over magnesium sulfate and then evaporated. The resulting yellow oil was subjected to flash column chromatography on silica eluting with a mixture of ethyl acetate and petrol (1:9, v/v) to give 4-*tert*-butoxy-3-oxo-butyric acid ethyl ester (5.20g) as a yellow oil. TLC (silica, 1:4, v/v ethyl acetate/petrol):  $R_F = 0.51$ . NMR (400MHz, CDCl<sub>3</sub>):  $\delta$  1.21(9H, s), 1.28(3H, t), 3.55(2H, s), 4.19(2H, q).

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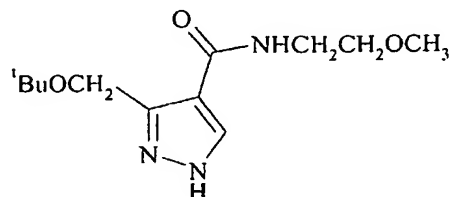
#### REFERENCE EXAMPLE 44

##### (a) 3-*tert*-Butyloxymethyl-1H-pyrazole-4-carboxylic acid isopropylamide

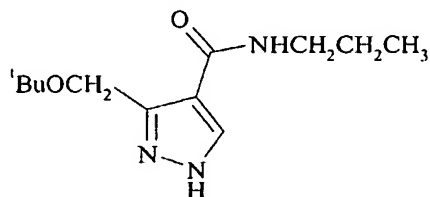


To a solution of 3-*tert*-butyloxymethyl-1H-pyrazole-4-carboxylic acid [1.520g, Reference Example 17(d)], hydroxybenzotriazole (3.110g) and diisopropyl ethylamine (4.010ml) in dimethyl formamide (130ml) was added isopropylamine (1.960ml) followed by 1-(3-dimethylaminopropyl)-3-ethylcarbodiimide hydrochloride (4.420g). The mixture was heated at 70°C for 2.5 hours, then diluted with ethyl acetate, then washed with water, then with brine, then dried over magnesium sulfate and then evaporated. The residue was triturated with a mixture of ethyl acetate and petrol to yield 3-*tert*-butyloxymethyl-1H-pyrazole-4-carboxylic acid isopropylamide (652mg) as an off-white solid. LC-MS (METHOD B): 2.99 minutes; 240 (M+H)<sup>+</sup>.

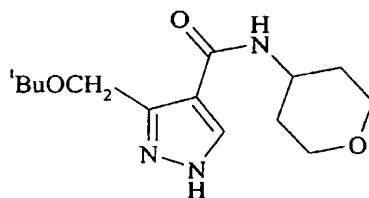
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(b) 3-tert-Butyloxymethyl-1H-pyrazole-4-carboxylic acid (2-methoxy-ethyl)-amide

By proceeding in a manner similar to Reference Example 44(a) above but using 2-methoxyethylamine, there was prepared 3-tert-butyloxymethyl-1H-pyrazole-4-carboxylic acid (2-methoxy-ethyl)-amide (811 mg) as an orange oil. LC-MS (METHOD B):  $R_T = 2.43$  minutes, 278 (M+Na)<sup>+</sup>.

(c) 3-tert-Butyloxymethyl-1H-pyrazole-4-carboxylic acid propylamide

By proceeding in a manner similar to Reference Example 44(a) above but using n-propylamine there was prepared 3-tert-butyloxymethyl-1H-pyrazole-4-carboxylic acid propylamide (1.12 g) as an orange oil. LC-MS (METHOD B):  $R_T = 2.65$  minutes, 262 (M+Na)<sup>+</sup>.

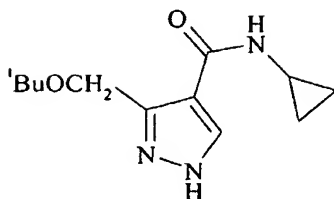
(d) 3-tert-Butyloxymethyl-1H-pyrazole-4-carboxylic acid (tetrahydro-pyran-4-yl)-lamide

By proceeding in a manner similar to Reference Example 44(a) above but using tetrahydropyran-4-ylamine there was prepared 3-tert-butyloxymethyl-1H-pyrazole-4-carboxylic acid (tetrahydro-pyran-4-yl)-lamide (5.50 g) as an orange oil. LC-MS (METHOD N):  $R_T = 3.05$  minutes, 282 (M+H)<sup>+</sup>.

(e) 3-tert-Butyloxymethyl-1H-pyrazole-4-carboxylic acid cyclopropylamide



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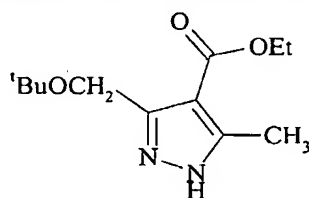


By proceeding in a manner similar to Reference Example 44(a) above but using cyclopropylamine there was prepared 3-tert-butyloxymethyl-1H-pyrazole-4-carboxylic acid cyclopropylamide (3.27g) as an orange oil. LC-MS (METHOD H):  $R_T = 2.24$  minutes, 238.38 (M+H)<sup>+</sup>.

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#### REFERENCE EXAMPLE 45

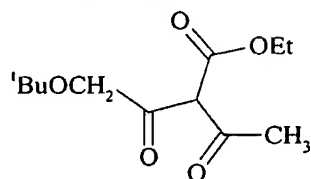
3-tert-Butyloxymethyl-5-methyl-1H-pyrazole-4-carboxylic acid ethyl ester



- To a solution of 2-acetyl-4-tert-butoxy-3-oxo-butyric acid ethyl ester [0.325g, Reference Example 46] in acetic acid (3ml) was added hydrazine hydrate (71μL). The mixture was stirred at ambient temperature for 16 hours and then evaporated to remove the acetic acid. The residue was dissolved in ethyl acetate and the solution was washed with 5% sodium hydrogen carbonate solution, then with water, then dried over magnesium sulfate, and then evaporated to yield 3-tert-butyloxymethyl-5-methyl-1H-pyrazole-4-carboxylic acid ethyl ester (0.258g) as a yellow oil which was used without further purification. LC-MS (METHOD B):  $R_T = 3.22$  minutes; 241 (M+H)<sup>+</sup>.

#### REFERENCE EXAMPLE 46

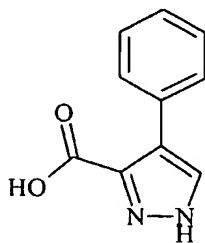
2-Acetyl-4-tert-butoxy-3-oxo-butyric acid ethyl ester



- A suspension of dry magnesium chloride (0.471g) in dichloromethane (6ml) was treated with 4-tert-butoxy-3-oxo-butyric acid ethyl ester [1.00g, Reference Example 43]. This mixture was cooled to 0°C, then treated with pyridine (0.80ml), then stirred for 15 minutes at 0°C and then treated with acetyl chloride (0.352ml). After stirring for a further 15 minutes at 0°C and then for 1 hour at ambient temperature the reaction mixture was treated with saturated aqueous ammonium chloride solution and

then extracted twice with ethyl acetate. The combined extracts were dried over magnesium sulfate and then evaporated to yield 2-acetyl-4-*tert*-butoxy-3-oxo-butyric acid ethyl ester (1.15g) as a yellow oil which was used without further purification. LC-MS (METHOD B):  $R_T = 3.16$  minutes; 243 (M-H)<sup>-</sup>.

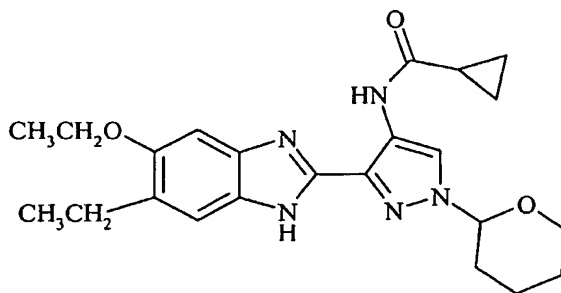
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REFERENCE EXAMPLE 474-Phenyl-1H-pyrazole-3-carboxylic acid

A solution of 3-methyl-4-phenylpyrazole (1.00g) in *tert*-butanol (15ml) and water (25ml), at 60°C, was treated portionwise potassium permanganate (5.47g). The temperature was then slowly elevated to  
 10 90°C and maintained at that temperature for 5 hours. The mixture was then cooled and filtered through a pad of celite. The filtrate was concentrated and the pH was adjusted to 10 to 14 by addition of 5N aqueous sodium hydroxide solution. This mixture was washed twice with ethyl acetate. The aqueous layer was then acidified to pH 3 to 5 and then extracted four times with ethyl acetate. The combined  
 15 extracts were dried over magnesium sulfate and then evaporated to yield 4-phenyl-1H-pyrazole-3-carboxylic acid (0.512g) as a white solid, which was used without further purification. MS: 189 (M+H)<sup>+</sup>. HPLC (METHOD B):  $R_T = 2.48$  minutes.

REFERENCE EXAMPLE 48

(a) Cyclopropanecarboxylic acid [3-(5-ethoxy-6-ethyl-1H-benzoimidazol-2-yl)-1-(tetrahydropyran-2-yl)-1H-pyrazol-4-yl]amide

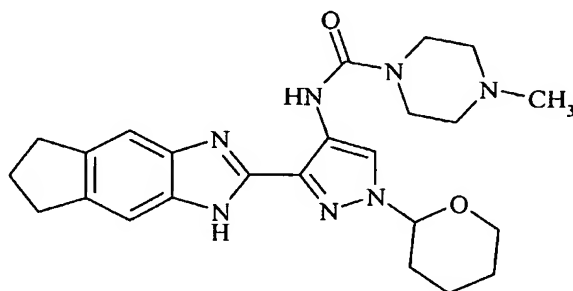


A solution of 3-(5-ethoxy-6-ethyl-1H-benzoimidazol-2-yl)-1-(tetrahydropyran-2-yl)-1H-pyrazol-4-ylamine [0.3 g, Reference Example 49(a)] and triethylamine (0.8 mL, excess) in tetrahydrofuran (20mL) was treated dropwise with cyclopropanecarbonyl chloride (0.3 g, 2.4 mmol). This mixture was

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stirred for 48 hours then diluted with aqueous sodium bicarbonate solution (100 mL) and then extracted twice with ethyl acetate (100mL). The combined extracts were evaporated and the residue was dissolved in tetrahydrofuran (50mL). This solution was treated with a solution of potassium hydroxide (1.1 g) in ethanol (10 mL) and the mixture was stirred for 2 hours, then poured into water (100 mL) and then extracted twice with ethyl acetate (100mL). The combined extracts were evaporated and the residue was chromatographed on silica gel eluting with a mixture of heptane and ethyl acetate (1/1, v/v) to give cyclopropanecarboxylic acid [3-(5-ethoxy-6-ethyl-1H-benzoimidazol-2-yl)-1-(tetrahydropyran-2-yl)-1H-pyrazol-4-yl]amide (0.3g) as an off-white solid. LC-MS (Method E):  $R_T$  = 2.99 minutes, 424 (M+H)<sup>+</sup>.

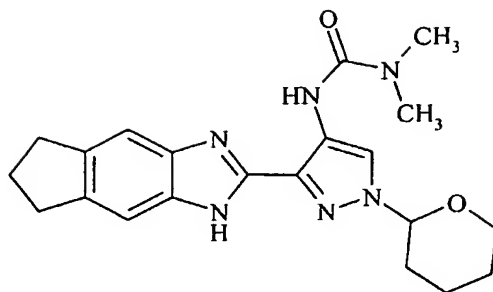
- (b) 4-Methylpiperazine-1-carboxylic acid [3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1-(tetrahydropyran-2-yl)-1H-pyrazol-4-yl]amide



By proceeding in a similar manner to Reference Example 48(a) above but (i) treating a solution of 3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1-(tetrahydropyran-2-yl)-1H-pyrazol-4-ylamine [302mg, Reference Example 49(d)] and triethylamine (0.94g, 10 eq) in tetrahydrofuran (10 mL) with 4-methylpiperazine-1-carbonyl chloride (930mg, 4.67 mmol), (ii) stirring the mixture at 45°C for 4 hours, then at 55°C for 1 hour, (iii) treating the cooled reaction mixture with aqueous sodium bicarbonate (200mL) and extracting this mixture three times with ethyl acetate (100mL), and (iv) evaporating the combined extracts and chromatographing the residue on silica gel (ethyl acetate/gradient 5-20% methanol) there was prepared 4-methylpiperazine-1-carboxylic acid [3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1-(tetrahydropyran-2-yl)-1H-pyrazol-4-yl]amide (189mg) as a purple solid. LC-MS (Method F):  $R_T$  = 2.28 minutes, 450 (M+H)<sup>+</sup>.

- (c) 1,1-Dimethyl-3-[3-(1,5,6,7-tetrahydro-s-indacen-2-yl)-1-(tetrahydropyran-2-yl)-1H-pyrazol-4-yl]urea

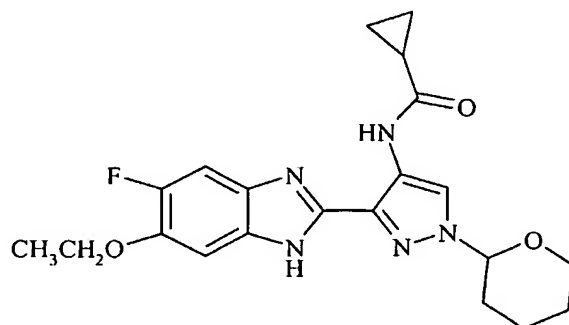
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By proceeding in a similar manner to Reference Example 48(b) above but using dimethylcarbamy chloride (4 eq) there was prepared 1,1-dimethyl-3-[3-(1,5,6,7-tetrahydro-s-indacen-2-yl)-1-(tetrahydropyran-2-yl)-1H-pyrazol-4-yl]urea as a beige foam. LC-MS (Method F):  $R_T = 3.22$  minutes,

5 395 (M+H)<sup>+</sup>.

(d) Cyclopropanecarboxylic acid [3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1-(tetrahydropyran-2-yl)-1H-pyrazol-4-yl]amide

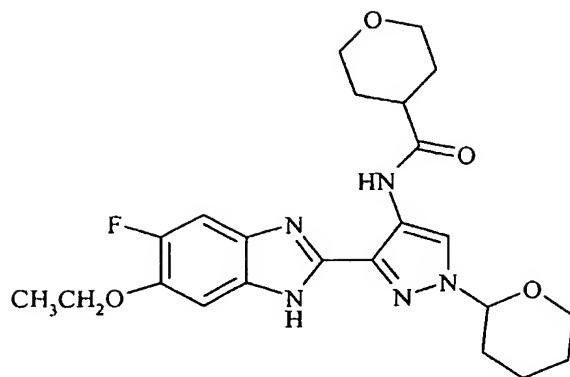


10 By proceeding in a similar manner to Reference Example 48(a) above but using 6-ethoxy-5-fluoro-2[4-amino-1-(tetrahydropyran-2-yl)-1H-pyrazole-3-yl]-1H-benzimidazole [0.45g, Reference Example 49(e)] and subjecting the reaction product to chromatography on silica gel (heptane/ethyl acetate, 7/3, v/v) there was prepared cyclopropanecarboxylic acid [3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1-(tetrahydropyran-2-yl)-1H-pyrazol-4-yl]amide (90mg). LC-MS (Method G):  $R_T = 8.1$  minutes, 414

15 (M+H)<sup>+</sup>.

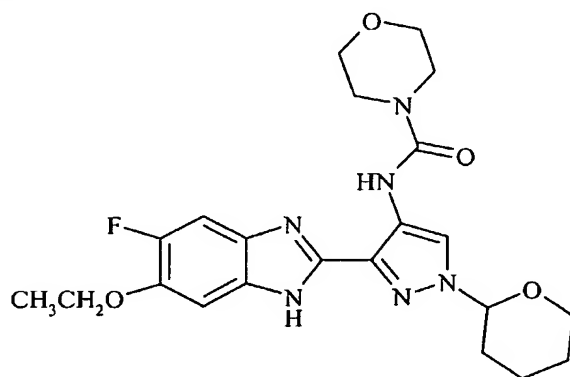
(e) Tetrahydropyran-4-carboxylic acid [3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1-(tetrahydropyran-2-yl)-1H-pyrazole-4-yl]amide

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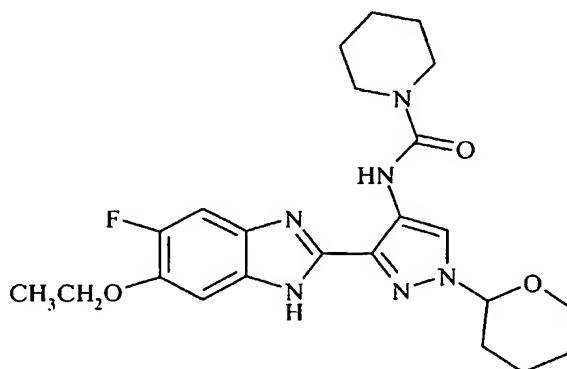
By proceeding in a similar manner to Reference Example 48(a) above but using 6-ethoxy-5-fluoro-2[4-amino-1-(tetrahydropyran-2-yl)-1H-pyrazole-3-yl]-1H-benzimidazole [0.45g, Reference Example 49(e)] and tetrahydropyran-4-carbonyl chloride (0.135g) and subjecting the reaction product to chromatography on silica gel (heptane/ethyl acetate, 7/3, v/v) there was prepared tetrahydropyran-4-carboxylic acid [3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1-(tetrahydropyran-2-yl)-1H-pyrazol-4-yl]amide (120mg). LC-MS (Method G):  $R_T = 8.05$  minutes, 458 (M+H)<sup>+</sup>.

(f) Morpholine-4-carboxylic acid[3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1-(tetrahydropyran-2-yl)-1H-pyrazol-4-yl]amide



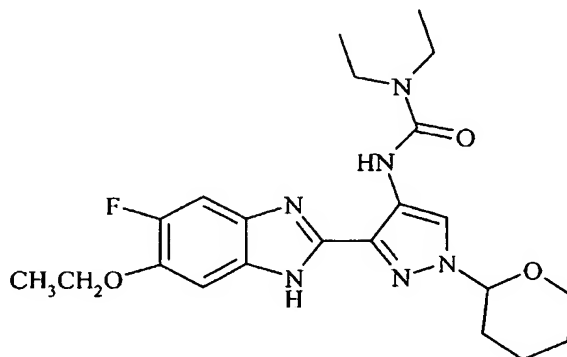
By proceeding in a similar manner to Reference Example 48(a) above but (i) treating 6-ethoxy-5-fluoro-2[4-amino-1-(tetrahydropyran-2-yl)-1H-pyrazole-3-yl]-1H-benzimidazole [90mg, Reference Example 49(e)] and diisopropylethylamine (168mg) in tetrahydrofuran (4 mL) with morpholine-4-carbonyl chloride (194mg) for 2 days at ambient temperature, and (ii) subjecting the reaction product to chromatography on silica gel (heptane/ethyl acetate, 2/1, v/v), there was prepared morpholine-4-carboxylic acid[3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1-(tetrahydropyran-2-yl)-1H-pyrazol-4-yl]amide (140 mg). LC-MS (Method G):  $R_T = 7.85$  minutes, 459 (M+H)<sup>+</sup>.

- (g) Piperidine-4-carboxylic acid[3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1-(tetrahydropyran-2-yl)-1H-pyrazol-4-yl]amide



- By proceeding in a similar manner to Reference Example 48(f) above but using piperidine-1-carbonyl chloride (191mg) there was prepared piperidine-4-carboxylic acid[3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1-(tetrahydropyran-2-yl)-1H-pyrazol-4-yl]amide (127mg). LC-MS (Method G):  $R_T$  = 8.2 minutes, 457 (M+H)<sup>+</sup>.

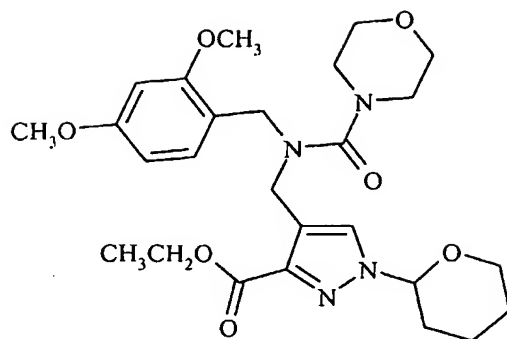
- 10 (h) 3-[6-Ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1-(tetrahydropyran-2-yl)-1H-pyrazol-4-yl]-1,1-diethylurea



- By proceeding in a similar manner to Reference Example 48(f) above but using diethylcarbonyl chloride (175mg) there was prepared 3-[6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1-(tetrahydropyran-2-yl)-1H-pyrazol-4-yl]-1,1-diethylurea (110mg). LC-MS (Method G)  $R_T$  = 7.9 minutes, 445 (M+H)<sup>+</sup>.

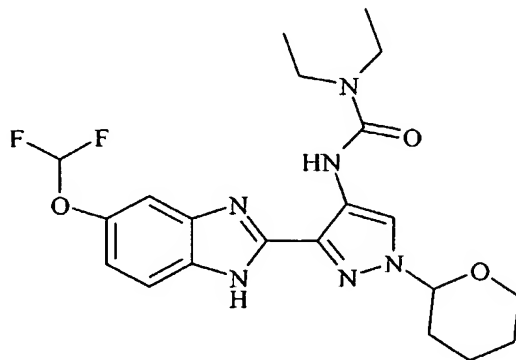
- 15 (i) 4-{[(2,4-Dimethoxy-benzyl)-(morpholine-4-carbonyl)-amino]-methyl}-1-(tetrahydro-pyran-2-yl)-1H-pyrazole-3-carboxylic acid

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By proceeding in a similar manner to Reference Example 48(a) above but (i) using 4-[(2,4-dimethoxybenzylamino)-methyl]-1-(tetrahydro-pyran-2-yl)-1H-pyrazole-3-carboxylic acid ethyl ester (829mg, Reference Example 60) and 4-morpholinecarbonyl chloride (0.96ml), and (ii) subjecting the reaction product to flash chromatography on silica eluting with ethyl acetate, there was prepared 4-[(2,4-dimethoxybenzyl)-(morpholine-4-carbonyl)-amino]-methyl-1-(tetrahydro-pyran-2-yl)-1H-pyrazole-3-carboxylic acid (595mg) as a colourless oil. LC-MS (Method B):  $R_T = 2.96$  minutes, 517.30 (M+H)<sup>+</sup>.

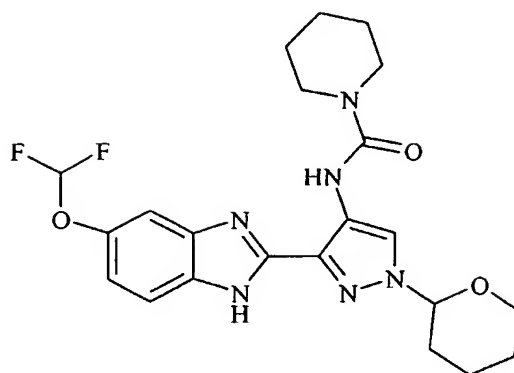
(j) 3-[3-(5-Difluoromethoxy-1H-benzoimidazol-2-yl)-1-(tetrahydro-pyran-2-yl)-1H-pyrazol-4-yl]-1,1-diethyl-urea



By proceeding in a manner similar to Reference Example 48(a) above but using 3-(5-difluoromethoxy-1H-benzoimidazol-2-yl)-1-(tetrahydro-pyran-2-yl)-1H-pyrazol-4-ylamine [Reference Example 49(g)] and diethylcarbonyl chloride, there was prepared 3-[3-(5-difluoromethoxy-1H-benzoimidazol-2-yl)-1-(tetrahydro-pyran-2-yl)-1H-pyrazol-4-yl]-1,1-diethyl-urea (220mg) as a pale brown solid. LC-MS (METHOD K):  $R_T = 4.02$  minutes, 447.27 (M-H)<sup>-</sup>.

(k) Piperidine-1-carboxylic acid [3-(5-difluoromethoxy-1H-benzoimidazol-2-yl)-1-(tetrahydro-pyran-2-yl)-1H-pyrazol-4-yl]-amide

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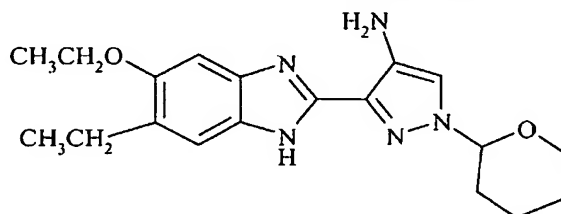


By proceeding in a manner similar to Reference Example 48(j) above but using piperidine-1-carboxylic chloride there was prepared piperidine-1-carboxylic acid [3-(5-difluoromethoxy-1H-benzoimidazol-2-yl)-1-(tetrahydro-pyran-2-yl)-1H-pyrazol-4-yl]-amide (220mg) as a pale brown solid. LC-MS

5 (METHOD N):  $R_T = 4.07$  minutes, 459.28 (M-H)<sup>-</sup>.

#### REFERENCE EXAMPLE 49

(a) 3-(5-Ethoxy-6-ethyl-1H-benzoimidazol-2-yl)-1-(tetrahydropyran-2-yl)-1H-pyrazol-4-ylamine

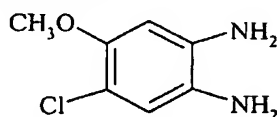


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A solution of 5-ethoxy-6-ethyl-2-[4-nitro-1-(tetrahydropyran-2-yl)-1H-pyrazol-3-yl]-1H-benzoimidazole [0.8g, Reference Example 50(a)] in ethanol (100mL) was treated with palladium on carbon (0.1g, 10%) and mixture was hydrogenated at atmospheric pressure (balloon) for 4 days. The catalyst was filtered off, the filtrate was evaporated and the residue was chromatographed on silica gel (ethyl acetate with gradient of 0-10% methanol) to give 3-(5-ethoxy-6-ethyl-1H-benzoimidazol-2-yl)-1-(tetrahydropyran-2-yl)-1H-pyrazol-4-ylamine (0.3g) as a solid. LC-MS (Method E):  $R_T = 2.15$  minutes, 356 (M+H)<sup>+</sup>.

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(b) 4-chloro-5-methoxybenzene-1,2-diamine



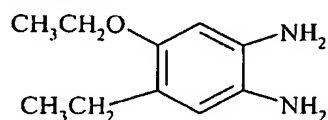
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By proceeding in a similar manner to Reference Example 49 (a) above, but using 5-chloro-4-methoxy-2-nitrophenylamine [Reference Example 31(h)] and subjecting the reaction product to chromatography on silica gel (ethyl acetate with gradient of 40% to 0% heptane) there was prepared 4-chloro-5-methoxybenzene-1,2-diamine (1.0 g) as an orange solid. MS: 173 (M+H)<sup>+</sup>.

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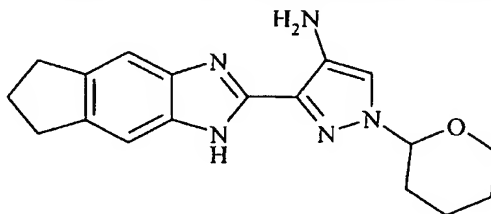
(c) 4-ethoxy-5-ethyl-benzene-1,2-diamine



By proceeding in a similar manner to Reference Example 49(a) above, but using 4-ethoxy-5-ethyl-2-nitrophenylamine [Reference Example 31(g)] and subjecting the reaction product to chromatography on silica gel eluting with ethyl acetate there was prepared 4-ethoxy-5-ethyl-benzene-1,2-diamine as a dark solid. LC-MS (Method E): R<sub>T</sub> = 8.434 minutes, 180 (M+H)<sup>+</sup>.

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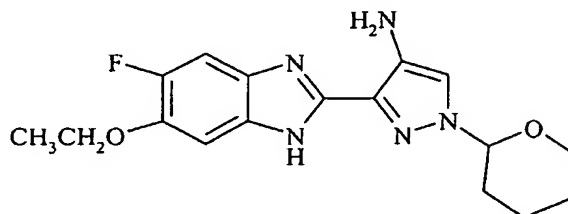
(d) 3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1-(tetrahydropyran-2-yl)-1H-pyrazol-4-ylamine



By proceeding in a similar manner to Reference Example 49(a) above, but (i) using a solution of 2-[4-nitro-1-(tetrahydropyran-2-yl)-1H-pyrazol-3-yl]-1,5,6,7-tetrahydro-1,3-diaza-s-indacene [4.1g, Reference Example 50(b)] in ethanol (120 mL) and 5% palladium on carbon (320 mg), and (ii) using a Parr hydrogenation apparatus at 60 psi for 18 hours there was prepared 3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1-(tetrahydropyran-2-yl)-1H-pyrazol-4-ylamine (368 mg) as a brown solid. LC (Method G): R<sub>T</sub> = 3.079 minutes, 324 (M+H)<sup>+</sup> and 346 (M+Na)<sup>+</sup>.

20

(e) 6-Ethoxy-5-fluoro-2[4-amino-1-(tetrahydropyran-2-yl)-1H-pyrazole-3-yl]-1H-benzimidazole

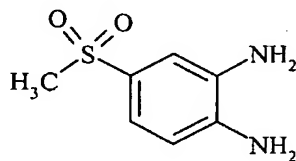


By proceeding in a similar manner to Reference Example 49(a) above, but using 6-ethoxy-5-fluoro-2-[4-nitro-1-(tetrahydropyran-2-yl)-1H-benzimidazole [1.2g, Reference Example 50(c)] there was

25

prepared 6-ethoxy-5-fluoro-2-[4-amino-1-(tetrahydropyran-2-yl)-1H-pyrazole-3-yl]-1H-benzimidazole (1.2g). LC-MS (Method G):  $R_T = 6.74$  minutes, 346 (M+H)<sup>+</sup>.

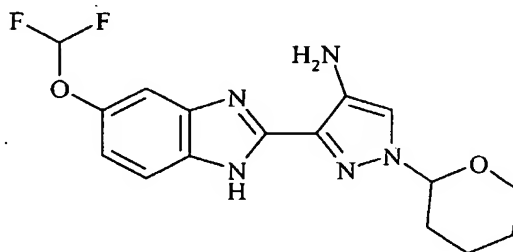
(f) 4-Methanesulfonyl-benzene-1,2-diamine



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By proceeding in a similar manner to Reference Example 49(a) above, but using N<sup>\*</sup>1\*-benzyl-4-methanesulfonyl-benzene-1,2-diamine [Reference Example 65] there was prepared 4-methanesulfonyl-benzene-1,2-diamine as a white solid. LC-MS (METHOD J):  $R_T = 0.98$  minutes, 187.32 (M+H)<sup>+</sup>.

10 (g) 3-(5-Difluoromethoxy-1H-benzimidazol-2-yl)-1-(tetrahydro-pyran-2-yl)-1H-pyrazol-4-ylamine

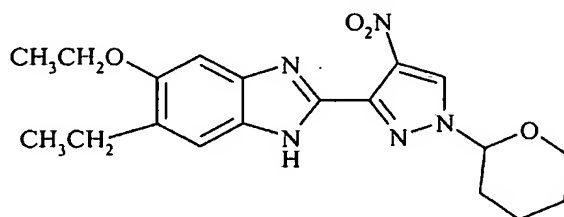


By proceeding in a manner similar to Reference Example 49(a) above but using 5-difluoromethoxy-2-[4-nitro-1-(tetrahydro-pyran-2-yl)-1H-pyrazol-3-yl]-1H-benzimidazole [Reference Example 50(e)], there was prepared 3-(5-difluoromethoxy-1H-benzimidazol-2-yl)-1-(tetrahydro-pyran-2-yl)-1H-pyrazol-4-ylamine (730mg) as a pale brown solid. LC-MS (METHOD N):  $R_T = 3.27$  minutes, 350.29 (M+H)<sup>+</sup>.

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REFERENCE EXAMPLE 50

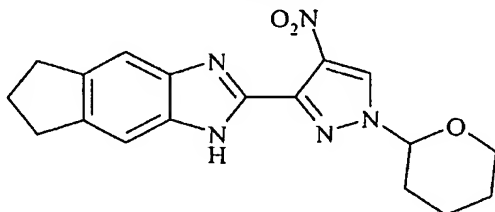
(a) 5-Ethoxy-6-ethyl-2-[4-nitro-1-(tetrahydropyran-2-yl)-1H-pyrazol-3-yl]-1H-benzimidazole



A mixture of 4-ethoxy-5-ethyl-benzene-1,2-diamine [0.18g, Reference Example 30(s)], 4-nitro-1-

(tetrahydro-pyran-2-yl)-1H-pyrazole-3-carbaldehyde [0.225g, Reference Example 6(m)] and sodium bisulfite (0.12 g, 1.2 mmol) in dimethylformamide (10mL) was heated at 120°C for 1 hour. The mixture was cooled, water (100 mL) was added and the aqueous mixture was extracted with twice ethyl acetate (50mL). The combined extracts were evaporated and the residue was chromatographed on silica gel (ethyl acetate with gradient of 20-0% heptane) to give 5-ethoxy-6-ethyl -2-[4-nitro-1-(tetrahydropyran-2-yl)-1H-pyrazol-3-yl]-1H-benzimidazole (200mg) as a solid. LC-MS (Method E)  $R_T = 2.85$  minutes, 386 (M+H)<sup>+</sup>.

(b) 2-[4-nitro-1-(tetrahydropyran-2-yl)-1H-pyrazol-3-yl]-1,5,6,7-tetrahydro-1,3-diaza-s-indacene

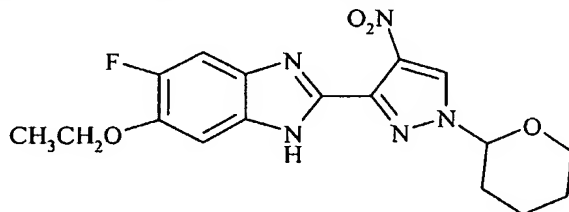


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By proceeding in a similar manner to Reference Example 50(a) but using indane-5,6-diamine (1.05g, prepared as described by Sui Xiong Cai et al., J.Med.Chem., 1997, 40, pages 730-738) and 4-nitro-1-(tetrahydro-pyran-2-yl)-1H-pyrazole-3-carbaldehyde [2.5g, Reference Example 6(m)] there was prepared 2-[4-nitro-1-(tetrahydropyran-2-yl)-1H-pyrazol-3-yl]-1,5,6,7-tetrahydro-1,3-diaza-s-indacene which was used without further purification.

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(c) 6-Ethoxy-5-fluoro-2-[4-nitro-1-(tetrahydropyran-2-yl)-1H-benzimidazole

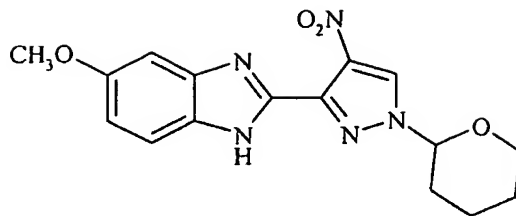


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By proceeding in a similar manner to Reference Example 50(a) but using 4-ethoxy-5-fluoro-benzene-1,2-diamine (2.2 g, prepared according to the method of Uchida, et al, Chem. Pharm. Bull. 1989, volume 37, pages 1517 to 1523) there was prepared 6-ethoxy-5-fluoro-2-[4-nitro-1-(tetrahydropyran-2-yl)-1H-benzimidazole. LC-MS (Method G):  $R_T = 8.1$  minutes, 376 (M+H)<sup>+</sup>.

(d) 5-Methoxy-2-[4-nitro-1-(tetrahydro-pyran-2-yl)-1H-pyrazol-3-yl]-1H-benzimidazole

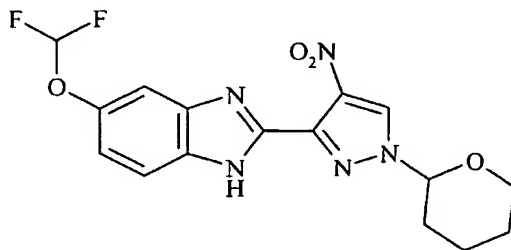
-548-



By proceeding in a similar manner to Reference Example 50(a) but using 4-methoxy-1,2-phenylenediamine (117mg) there was prepared 5-methoxy-2-[4-nitro-1-(tetrahydro-pyran-2-yl)-1H-pyrazol-3-yl]-1H-benzimidazole (282mg) as a deep red oil. LC-MS (Method H):  $R_T = 2.02$  minutes,

5 344.21 (M+H)<sup>+</sup>, 342.24 (M-H)<sup>-</sup>.

(e) 5-Difluoromethoxy-2-[4-nitro-1-(tetrahydro-pyran-2-yl)-1H-pyrazol-3-yl]-1H-benzimidazole



By proceeding in a manner similar to Reference Example 50(a) above but using difluoromethoxy-benzene-1,2-diamine [Reference Example 30(y)] and 4-nitro-1-(tetrahydropyran-2-yl)-1H-pyrazole-3-carbaldehyde [Reference Example 6(m)], there was prepared 5-difluoromethoxy-2-[4-nitro-1-(tetrahydro-pyran-2-yl)-1H-pyrazol-3-yl]-1H-benzimidazole (910mg) as a pale brown solid. LC-MS (METHOD N):  $R_T = 3.40$  minutes, 380.22 (M+H)<sup>+</sup>.

15

#### REFERENCE EXAMPLE 51

##### 1-Ethoxy-2-ethyl benzene

To a solution of 2-ethylphenol (6.9g, 56.5 mmol), triphenylphosphine (15.7 g, 60 mmol) and ethanol (6 mL, excess) in tetrahydrofuran (100mL) was added dropwise DIAD (12.1g, 60 mmol). After stirring for 18 hours, mixture was evaporated and the residue was chromatographed on silica gel (heptane/ethyl acetate 9/1) to give 1-ethoxy-2-ethyl benzene (7.2g) as a clear liquid. GC-MS shows one peak,  $R_T = 5.6$  minutes. MS 150 (M+).

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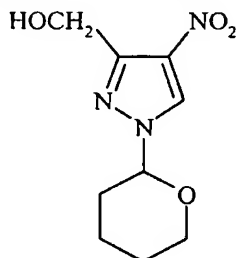
#### REFERENCE EXAMPLE 52

##### N-(3-Chloro-4-methoxyphenyl)acetamide

- 5 A solution of 3-chloro-4-methoxyphenylamine (6.3g) and triethylamine (4.04g) in dichloromethane (100 mL) was chilled in an ice bath, acetyl chloride (3.45g) was added dropwise and the mixture was stirred at ambient temperature overnight. The reaction mixture was extracted with water (2X30 mL) and brine (2X30 mL) and the organic layer was dried with magnesium sulfate. The drying agent was removed by filtration and the filtrate was evaporated to give N-(3-chloro-4-methoxyphenyl)acetamide (7.45g) as a dark oil, which solidified on standing. MS: 200 (M+H)<sup>+</sup>.

#### REFERENCE EXAMPLE 53

[4-Nitro-1-(tetrahydro-pyran-2-yl)-1H-pyrazol-3-yl]-methanol



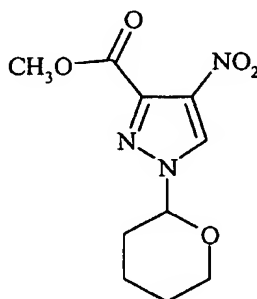
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- A stirred solution of 4-nitro-1-(tetrahydro-pyran-2-yl)-1H-pyrazole-3-carboxylic acid methyl ester [500mg, Reference Example 54(a)] in tetrahydrofuran (20ml) under nitrogen at -78°C was treated dropwise with a solution of diisobutylaluminium hydride in tetrahydrofuran (8.82ml, 1M). The reaction mixture was stirred at room temperature for 1.5 hours. The reaction mixture was taken up in diethyl ether (100ml) and quenched with water (150ml). The resulting suspension was filtered through celite and the organic layer was collected from the filtrate, then dried over magnesium sulfate and then evaporated to yield [4-nitro-1-(tetrahydro-pyran-2-yl)-1H-pyrazol-3-yl]-methanol (349mg) as a peach oil. LC-MS (Method H): R<sub>T</sub> = 2.08 minutes, 250.29 (M+H+Na)<sup>+</sup>.
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#### REFERENCE EXAMPLE 54

(a) 4-Nitro-1-(tetrahydro-pyran-2-yl)-1H-pyrazole-3-carboxylic acid methyl ester

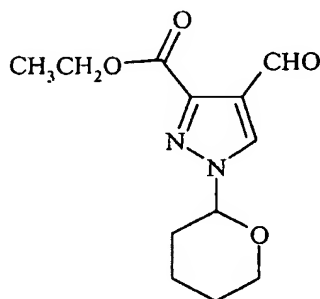


A suspension of 4-nitro-1H-pyrazole-3-carboxylic acid methyl ester (1.3g, Reference Example 55) and p-toluene sulfonic acid (144mg) in chloroform (30ml) at 0°C was treated with 3,4-dihydropyran

-550-

(1.04ml) dropwise. The reaction mixture was allowed to warm to room temperature overnight. The reaction mixture was washed with saturated sodium bicarbonate (40ml) and water (3 x 40ml). The combined aqueous layers were extracted with dichloromethane (3 x 60ml). The organic layers were combined, dried over magnesium sulfate and concentrated to yield 4-nitro-1-(tetrahydro-pyran-2-yl)-1H-pyrazole-3-carboxylic acid methyl ester (2.23g) as a viscous brown oil. LC-MS (Method H):  $R_T = 2.79$  minutes, 278.21 (M+H+Na)<sup>+</sup>.

(b) 4-Formyl-1-(tetrahydro-pyran-2-yl)-1H-pyrazole-3-carboxylic acid ethyl ester

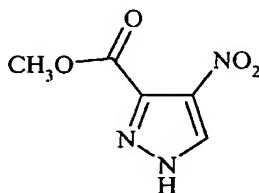


10 By proceeding in a manner similar to Reference Example 54(a) above but using 4-formyl-1H-pyrazole-3-carboxylic acid ethyl ester (100mg, Reference Example 57) there was prepared 4-formyl-1-(tetrahydro-pyran-2-yl)-1H-pyrazole-3-carboxylic acid ethyl ester (170mg) was prepared as a viscous yellow oil. LC-MS (Method J):  $R_T = 3.29$  minutes, 275.30 (M+H+Na)<sup>+</sup>.

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REFERENCE EXAMPLE 55

4-Nitro-1H-pyrazole-3-carboxylic acid methyl ester

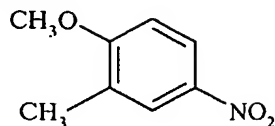


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A stirred suspension of 4-nitro-3-pyrazolecarboxylic acid (1g) in dichloromethane under nitrogen at 0°C was treated with oxalyl chloride (1.11ml) followed by dimethylformamide (5drops). The reaction mixture was warmed to room temperature and stirred overnight. Methanol (10ml) was added and the reaction mixture was stirred overnight. The solvent was removed under reduced pressure and azeotroped with toluene twice to yield 4-nitro-1H-pyrazole-3-carboxylic acid methyl ester (1.3g) as a pale green solid. LC-MS (Method H):  $R_T = 1.94$  minutes, 170.23 (M-H)<sup>-</sup>.

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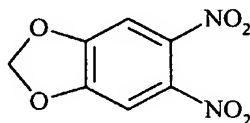
REFERENCE EXAMPLE 56

(a) 1-Methoxy-2-methyl-4-nitrobenzene

2-Methylanisole (2.5ml) in acetic acid (140ml) and dichloromethane (150ml) was cooled to 15°C.

Concentrated nitric acid (20ml) was added slowly keeping the temperature of the reaction below 40°C.

- 5 The reaction was stirred at ambient temperature for 30 minutes and cooled to 0°C before adding fuming nitric acid (50ml) dropwise. The reaction mixture was allowed to warm to ambient temperature slowly and stirred for a further 4 days. The reaction mixture was poured onto ice water (600ml) and the organic layer was washed with water (2 x 40ml) and saturated sodium hydrogencarbonate (2 x 40ml), dried over magnesium sulfate and concentrated. The residual deep red solid was subjected to flash
- 10 silica chromatography on silica eluting with isohexane/ethyl acetate (9:1) to (7:3) to yield 1-methoxy-2-methyl-4-nitrobenzene (2.70g) as an off white solid. LC-MS (Method J):  $R_T = 3.74$  minutes, 168.27 (M+H)<sup>+</sup>.

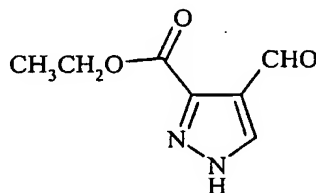
(b) 5,6-Dinitro-benzo[1,3]dioxole

15 By proceeding in a manner similar to Reference Example 56(a) above but using

1,2-methylenedioxybenzene there was prepared 5,6-dinitro-benzo[1,3]dioxole as an orange solid.

HPLC (Method C):  $R_T = 2.99$  minutes; 490.24 (2M+1).

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REFERENCE EXAMPLE 574-Formyl-1H-pyrazole-3-carboxylic acid ethyl ester

Phosphorus oxychloride (5.07ml) was added dropwise to dimethylformamide (8.4ml) at 0°C under

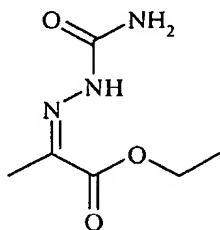
nitrogen. Ethyl pyruvate semicarbazide (4.3g, Reference Example 58) was added portionwise to the

- 25 stirring solution at 0°C under a nitrogen positive pressure. The reaction mixture was heated at 60°C for 2.5 hours and cooled to ambient temperature before pouring slowly onto ice (30g). The pH of the reaction mixture was adjusted to pH12 with 6.25M sodium hydroxide solution whilst maintaining the

temperature at 0°C. The aqueous reaction mixture was heated at 60°C for 5 minutes and cooled to 0°C. The pH was re-adjusted to pH6 with 1M hydrochloric acid. The resulting precipitate which formed after 1 hour was collected by filtration to yield 4-formyl-1H-pyrazole-3-carboxylic acid ethyl ester (1.02g) as a pale yellow solid. LC-MS (Method J):  $R_T = 2.55$  minutes, 169.27 (M+H)<sup>+</sup>, 167.30 (M-H)<sup>-</sup>.

#### REFERENCE EXAMPLE 58

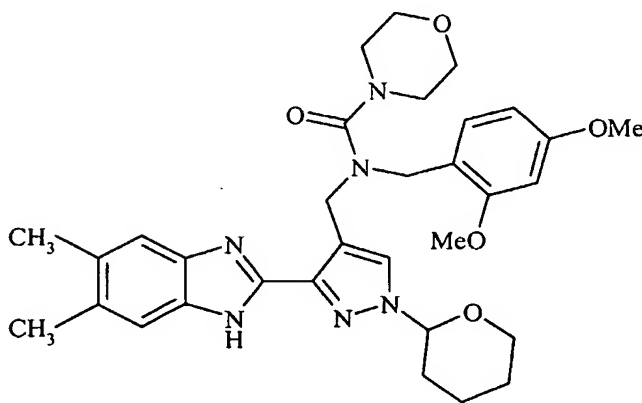
##### Ethyl pyruvate semicarbazide



- 10 A stirred solution of semicarbazide hydrochloride (11.1g) and sodium acetate (8.2g) in water (250ml) was treated with ethyl pyruvate (10.9ml) in one portion. The resulting white precipitate was collected by filtration to yield ethyl pyruvate semicarbazide (16.59g) as a white powder. LC-MS (Method J):  $R_T = 2.38$  minutes, 174.31 (M+H)<sup>+</sup>, 172.32 (M-H)<sup>-</sup>.

#### REFERENCE EXAMPLE 59

##### Morpholine-4-carboxylic acid (2,4-dimethoxy-benzyl)-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1-(tetrahydro-pyran-2-yl)-1H-pyrazol-4-ylmethyl]-amide



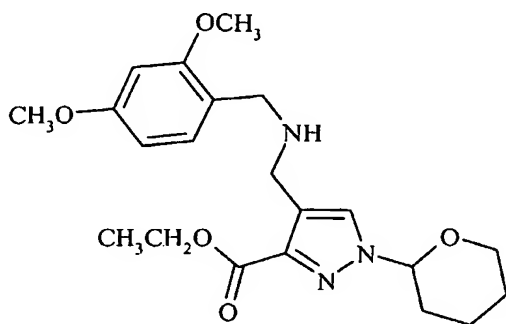
- 20 A stirred solution of [332mg, Reference Example 39(b)] in acetic acid (5ml) was heated at 120°C for 5 minutes in a Personal Chemistry Smith Creator microwave. The mixtures from five reactions were combined and the solvent removed *in vacuo* to yield morpholine-4-carboxylic acid (2,4-dimethoxy-



benzyl)-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1-(tetrahydro-pyran-2-yl)-1H-pyrazol-4-ylmethyl]-amide (1.22g) as a dark yellow oil. LC-MS (Method J):  $R_T = 2.70$  minutes, 589.63 (M+H)<sup>+</sup>.

#### REFERENCE EXAMPLE 60

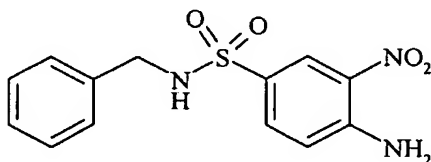
- 5 4-[[[(2,4-Dimethoxy-benzyl)-(morpholine-4-carbonyl)-amino]-methyl]-1-(tetrahydro-pyran-2-yl)-1H-pyrazole-3-carboxylic acid ethyl ester



- A stirred solution of 4-[(2,4-dimethoxy-benzylamino)-methyl]-1-(tetrahydro-pyran-2-yl)-1H-pyrazole-3-carboxylic acid ethyl ester [1g, Reference Example 54(b)] in tetrahydrofuran (25ml) was treated with  
 10 2,4-dimethoxybenzylamine (0.596ml). After stirring for 12 hours sodium triacetoxymethylborohydride (1.68g) was added to the reaction mixture and the reaction mixture was stirred for a further 1 hour before partitioning between ethyl acetate (200ml) and saturated sodium hydrogencarbonate (200ml). The aqueous layer was extracted twice with ethyl acetate (100ml) and the combined organic layers were dried over magnesium sulfate and then concentrated *in vacuo* to yield 4-[[[(2,4-dimethoxy-  
 15 benzyl)-(morpholine-4-carbonyl)-amino]-methyl]-1-(tetrahydro-pyran-2-yl)-1H-pyrazole-3-carboxylic acid ethyl ester (1.66g) as a yellow oil. LC-MS (Method B):  $R_T = 2.27$  minutes, 404.17 (M+H)<sup>+</sup>.

#### REFERENCE EXAMPLE 61

4-Amino-N-benzyl-3-nitro-benzenesulfonamide



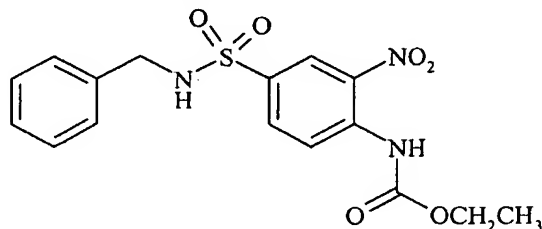
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To a stirred suspension of (4-Benzylsulfamoyl-2-nitro-phenyl)-carbamic acid ethyl ester (1.50g, Reference Example 62) in ethanol (30ml) was added 2M sodium hydroxide solution (5.93ml) and the reaction heated at 75°C for 2 hours. The reaction mixture was cooled to ambient temperature, poured onto ice-water and acidified to pH3 with 2M hydrochloric acid (30ml). The resultant precipitate was

collected by filtration and dried *in vacuo* to give 4-amino-N-benzyl-3-nitro-benzenesulfonamide (1.01g) as a yellow solid. LC-MS (METHOD J):  $R_T = 3.41$  minutes, 308.22 (M+H)<sup>+</sup>.

#### REFERENCE EXAMPLE 62

5 (4-Benzylsulfonyl-2-nitro-phenyl)-carbamic acid ethyl ester



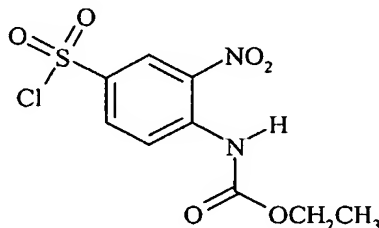
To a stirred solution of (4-chlorosulfonyl-2-nitro-phenyl)-carbamic acid ethyl ester (2g, Reference Example 63) in dichloromethane (50ml) at 0°C, under a nitrogen atmosphere, was added

diisopropylethylamine (2.71ml) and benzylamine (0.850ml). The reaction was warmed to ambient

- 10 temperature and stirred for 12 hours. The reaction mixture was then washed with water (2x20ml) and brine (2x20ml), dried over magnesium sulfate, filtered and the filtrate concentrated *in vacuo* to give the title compound (2.29g) as a brown solid. LC-MS (METHOD J):  $R_T = 3.83$  minutes, 380.12 (M+H)<sup>+</sup>.

#### REFERENCE EXAMPLE 63

15 (4-Chlorosulfonyl-2-nitro-phenyl)-carbamic acid ethyl ester

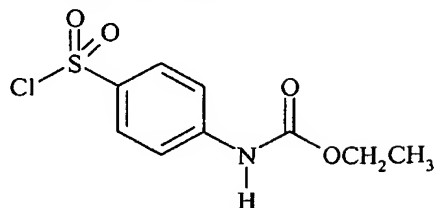


To a stirred suspension of (4-chlorosulfonyl-phenyl)-carbamic acid ethyl ester (5g, Reference Example

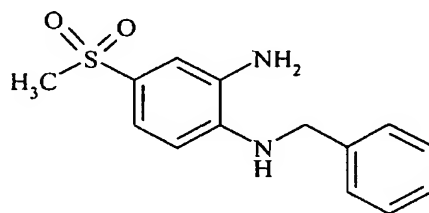
- 20 64) in concentrated sulfuric acid (25ml) at 0°C, was added dropwise a suspension of sodium nitrate (1.61g) in concentrated sulfuric acid and the reaction stirred for 3 hours. The reaction mixture was then poured onto ice, the resultant precipitate collected by filtration and dried *in vacuo* to give (4-chlorosulfonyl-2-nitro-phenyl)-carbamic acid ethyl ester (4.80g) as a yellow solid. LC-MS (METHOD B):  $R_T = 3.32$  minutes, 307.08 (M-H)<sup>-</sup>.

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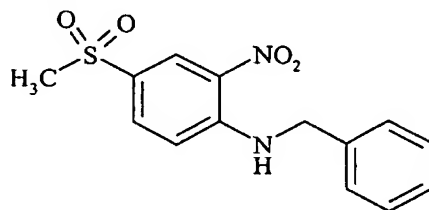
#### REFERENCE EXAMPLE 64

(4-Chlorosulfonyl-phenyl)-carbamic acid ethyl ester

- To a stirred solution of chlorosulfonic acid (20ml) at 0°C, was added *N*-phenylurethane (9.90g) at such a rate that the temperature did not exceed 20°C. The reaction was then heated at 60°C for 3 hours, cooled to ambient temperature and poured carefully onto ice. The resultant precipitate was collected by filtration and dried *in vacuo* to give (4-chlorosulfonyl-phenyl)-carbamic acid ethyl ester (14.50g) as an off-white solid. LC-MS (METHOD B):  $R_T = 3.11$  minutes, 284.23 (M+H)<sup>+</sup>.

REFERENCE EXAMPLE 6510 N\*1\*-Benzyl-4-methanesulfonyl-benzene-1,2-diamine

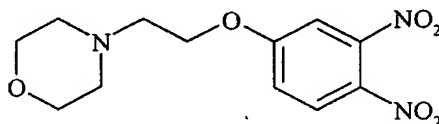
- A stirred solution of benzyl-(4-methanesulfonyl-2-nitro-phenyl)-amine (0.300g, Reference Example 66) and tin chloride (1.86g) in ethanol (5 ml) was heated in a Smith Creator microwave at 140°C for 10 minutes. The reaction mixture was basified using saturated sodium hydrogen carbonate solution to pH 8 and extracted with ethyl acetate. The organic layer was dried over magnesium sulfate and concentrated to give N\*1\*-benzyl-4-methanesulfonyl-benzene-1,2-diamine (0.255g) as a pale brown solid. LC-MS (METHOD B):  $R_T = 2.74$  minutes, 275.20 (M-H)<sup>-</sup>.

REFERENCE EXAMPLE 6620 Benzyl-(4-methanesulfonyl-2-nitro-phenyl)-amine

To a stirred suspension of (4-fluoro-2-nitrophenyl)methylsulfone (0.50g) and sodium hydrogen carbonate (0.575g) in ethanol and water (3:2) (30ml) was added benzylamine (0.374ml) and the

reaction stirred for 16 hours. The reaction mixture was then poured onto ice water, the resultant precipitate collected by filtration and dried *in vacuo* to give benzyl-(4-methanesulfonyl-2-nitro-phenyl)-amine (0.660g) as a yellow solid. LC-MS (METHOD B):  $R_T = 2.97$  minutes, 307.04 (M+H)<sup>+</sup>.

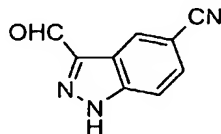
5

REFERENCE EXAMPLE 674-[2-(3,4-Dinitro-phenoxy)-ethyl]-morpholine

10

A mixture of 3,4-dinitrophenol (250mg), 4-(2-chloroethyl)morpholine hydrochloride (252mg) and potassium carbonate (375mg) in dimethylformamide (3ml) was heated at 120°C for 20 minutes in a Personal Chemistry Smith Creator microwave. The reaction mixture was partitioned between ethyl acetate and water and the organic layer dried over magnesium sulfate, filtered and the filtrate concentrated *in vacuo* to give 4-[2-(3,4-dinitro-phenoxy)-ethyl]-morpholine (319mg) as a yellow oil. LC-MS (METHOD B):  $R_T = 2.13$  minutes, 298 (M+H)<sup>+</sup>.

15

REFERENCE EXAMPLE 683-Formyl-1H-indazole-5-carbonitrile

20

To a suspension of 5-cyanoindole (3.93g) and sodium nitrite (19.07g) in water was added 6M hydrochloric acid slowly until the pH was less than 2. The suspension was then stirred for 3 hours at ambient temperature. The mixture was then extracted with ethyl acetate, dried over magnesium sulfate, filtered and the filtrate concentrated *in vacuo* to give 3-formyl-1H-indazole-5-carbonitrile (4.5g) as a pale brown solid. LC-MS (METHOD B):  $R_T = 2.47$  minutes, 172.29 (M+H)<sup>+</sup>.

25

IN VITRO TEST PROCEDURESA. IN VITRO TEST PROCEDURES FOR SYK

30

### 1. Inhibitory effects of compounds on SYK kinase

Inhibitory effects of compounds on SYK kinase were determined using a time-resolved fluorescent assay.

- 5 The catalytic domain of SYK kinase (residues A340-N635 ) was expressed as a fusion protein in yeast cells and purified to homogeneity. Kinase activity was determined in 50mM Tris-HCl buffer pH 7.0 containing 50mM NaCl, 5mM MgCl<sub>2</sub>, 5mM MnCl<sub>2</sub>, 1μM adenosine triphosphate and 10μM synthetic peptide Biotin-( β-Alanine)<sub>3</sub>-DEEDYEIPP-NH<sub>2</sub>. Enzyme reactions were terminated by the addition of
- 10 buffer containing 0.4M KF, 133mM EDTA, pH 7.0, containing a streptavidin-XL665 conjugate and a monoclonal phosphospecific antibody conjugated to a europium cryptate (Eu-K). Features of the two fluorophores, XL-665 and Eu-K are given in G.Mathis et al., Anticancer Research, 1997, 17, pages 3011-3014. The specific long time signal of XL-665, produced only when the synthetic peptide is phosphorylated by SYK, was measured on a Packard Discovery Microplate analyzer or on an LJJL Biosystems Analyst AD microplate reader. Inhibition of SYK activity with compounds of the
- 15 invention was expressed as percentage inhibition of control activity exhibited in the absence of test compounds. Particular compounds of the invention inhibit SYK activity with IC<sub>50</sub>'s in the range 100 micromolar to 0.1 nanomolar. Preferred compounds of the invention inhibit SYK activity with IC<sub>50</sub>'s in the range 5000 nanomolar to 0.1 nanomolar. Particularly preferred compounds of the invention inhibit SYK activity with IC<sub>50</sub>'s in the range 1000 nanomolar to 0.1 nanomolar. Especially preferred
- 20 compounds of the invention inhibit SYK activity with IC<sub>50</sub>'s in the range 100 nanomolar to 0.1 nanomolar. More especially preferred compounds of the invention inhibit SYK activity with IC<sub>50</sub>'s in the range 10 nanomolar to 0.1 nanomolar.

- 25 2. Antigen-induced degranulation of Rat Basophilic leukemia (RBL) cells as measured by [<sup>3</sup>H] 5-hydroxytryptamine (serotonin) release

#### 2.1 Cell culture, labelling of RBL-2H3 cells and performance of assay.

- 30 Method A: For each 24-well culture plate to be set up, 6 x 10<sup>6</sup> cells RBL-2H3 cells were washed and resuspended in 15 mL DMEM-10 containing 25μl of 1mCi/ mL [<sup>3</sup>H]-serotonin (0.5μCi/ mL final concentration) and 1μg/ mL (15mL) of anti-DNP IgE. 0.5 mL of cell suspension was added into each well of a 24-well plate. Cells were incubated for 2 days at 37°C, until they have reached confluence. The medium was gently aspirated from each well and the cells were then washed with assay buffer. A

final volume of 200mL of assay buffer (+ or - the test compounds at the appropriate concentrations) was then added to each of three replicate wells. 100ng/ mL of DNP (antigen) was then added to all wells (excluding negative control wells i.e. to measure spontaneous [<sup>3</sup>H]-serotonin release in the absence of receptor cross-linking). The cells were incubated for 30 minutes at 37°C and the reaction was stopped by transferring 100µl of the supernatant from each sample into a liquid scintillation microtitre plate kept on ice. 200µl of scintillant-40 was then added to each well of the microtitre plate and the plate was read on a Topcount Liquid Scintillation Counter.

Method B: RBL-2H3 cells are maintained in T75 flasks at 37°C and 5%CO<sub>2</sub>, and passaged every 3-4 days. To harvest cells, 5 ml trypsin-EDTA is used to rinse the flask once, then 5 ml trypsin is added to each flask, and incubated at room temperature for 2 minutes. Cells are transferred to a tube with 14ml medium, spun down at 1100 rpm RT for 5 minutes and resuspended at 2x10<sup>5</sup>/ml. Cells are sensitized by adding 1µl of DNP-specific IgE (1 mg/ml stock solution) to every 10 ml of cells. 200µl of cells are added to each well of a flat-bottom 96 well plate (40,000 cells/well), and the plate incubated overnight at 37°C and 5%CO<sub>2</sub>. The next day compounds are prepared in 100% DMSO at 10mM. Each compound is then diluted 1:100 in assay buffer and then diluted further in 1% DMSO-assay buffer to obtain final concentrations of 0.03-30µM. 80µl assay buffer (Hank's Balanced Salt Solution with Ca<sup>++</sup>/Mg<sup>++</sup>, 2 mg/ml glucose, 0.03% BSA) is added to each well, followed by 10µl of diluted compound. Incubation follows for 5 minutes. 10µl of DNP-HSA (100ng/ml) is added to each well and incubated at 37°C (no CO<sub>2</sub>) for 30 minutes. As one control, 1% DMSO alone (no compound) is added to a set of wells to determine total release. As another control, buffer is added instead of DNP-HSA to another set of wells to determine the assay background. After 30 minutes incubation, the supernatants are transferred to a new 96-well plate. Add 50µl supernatant to each well of an assay plate. Add 100µl of substrate solution (5 mM PNAG in 0.4M citric acid, 0.2M Na<sub>2</sub>HPO<sub>4</sub>) to each well and incubate at 37°C for 90 minutes. Add 50µl of 0.4 M glycine solution to stop the reaction and the plate is read at 405 nm on a Molecular Devices SpectraMax 250 plate reader.

## 2.2 Calculation of results

### Method A

- (i) The mean ± s.e.m. of each set of triplicate wells was calculated.
- (ii) Maximum response was the positive control wells containing antigen (10ng/mL) but no compound.
- (iii) Minimum response was the control wells containing no antigen and no compound.
- (iv) Using these values as the maximum (100%) and minimum (0%) values respectively, the data was normalised to give a percentage of the maximum response.

(v) A dose response curve was plotted and the IC<sub>50</sub> of the compound was calculated.

#### Method B

(i) The mean  $\pm$  SD of each set of triplicate wells was calculated.

5 (ii) Maximum response was the positive control wells containing antigen (100ng/mL) but no compound.

(iii) Minimum response was the control wells containing buffer (no antigen) and no compound.

(iv) Using these values as the maximum (100%) and minimum (0%) values respectively, the experimental data was calculated to yield a percentage of the maximum response (designated % control).

10 (v) A dose response curve was plotted and the IC<sub>50</sub> of the compound was calculated using Prism GraphPad software and nonlinear least squares regression analysis.

### B. IN VITRO TEST PROCEDURES FOR KDR

15

#### 1. Inhibitory effects of compounds on KDR

The inhibitory effect of the compounds is determined in a test of phosphorylation of a substrate by the enzyme KDR in vitro by the flasplate technique (96-well plate, NEN).

20 The cytoplasmic domain of human KDR enzyme is cloned in the form of a GST fusion into the baculovirus expression vector pFastBac. The protein is expressed in the SF21 cells and purified to about 60% homogeneity.

The kinase activity of KDR is measured in 20mM MOPS, 10mM MgCl<sub>2</sub>, 10mM MnCl<sub>2</sub>, 1mM DTT, 2.5mM EGTA, 10mM  $\beta$ -glycerophosphate, pH 7.2 in the presence of 10mM MgCl<sub>2</sub>, 100 $\mu$ M Na<sub>3</sub>VO<sub>4</sub>,

25 1 mM NaF. 10 $\mu$ l of the compound are added to 70 $\mu$ l of kinase buffer containing 100ng of KDR enzyme at 4°C. The reaction is initiated by adding 20 $\mu$ l of solution containing 2 $\mu$ g of substrate (fragment SH2-SH3 of PLC $\gamma$  expressed in the form of a GST fusion protein), 2 $\mu$ Ci  $\gamma$ 33P[ATP] and 2 $\mu$ M cold ATP. After incubating for 1 hour at 37°C, the reaction is quenched by adding 1 volume (100 $\mu$ l) of 200mM EDTA. The incubation buffer is removed and the wells are washed three times with 300 $\mu$ l of PBS. The radioactivity is measured in each well using a Top Count NXT instrument (Packard).

Background noise is determined by measuring the radioactivity in wells in quadruplet containing radioactive ATP and the substrate alone.

35 An activity control is measured in wells in quadruplet containing all the reagents ( $\gamma$ 33P-[ATP], KDR and the substrate PLC $\gamma$ ) and in the absence of compound.

The inhibition of the KDR activity with the compound of the invention is expressed as a percentage of inhibition of the control activity determined in the absence of compound.

The compound SU5614 (Calbiochem) (1  $\mu$ M) is included in each plate as inhibition control.

The IC<sub>50</sub> values for the compounds are calculated by plotting the dose-response curves. The IC<sub>50</sub>

5 corresponds to the concentration of compound that induces a 50% inhibition of the kinase activity.

Particular compounds of the invention inhibit KDR activity with IC<sub>50</sub>'s in the range 100 micromolar to 10 nanomolar. Preferred compounds of the invention inhibit KDR activity with IC<sub>50</sub>'s in the range 3000 nanomolar to 10 nanomolar. Particular preferred compounds of the invention inhibit KDR activity with IC<sub>50</sub>'s in the range 300 nanomolar to 10 nanomolar.

10

II) Cellular activity on endothelial cells

1) Inhibition of the VEGF-dependent proliferation of HDMECs

15 The anti-KDR activity of the molecules is assessed by incorporating [14C]-thymidine into HDMECs (Human Dermal Microvascular Endothelial Cells) in response to VEGF.

HDMECs (Promocell, passage 5 to 7) are inoculated in 100  $\mu$ l at 5000 cells per well in Cytostar (Amersham) 96-well plates precoated with attachment factor (AF, Cascad Biologics) at 37°C, 5% CO<sub>2</sub>, on day 1. On day 2, the complete medium (basal medium supplemented with 5% FCS and a mixture of growth factors) is replaced with minimum medium (basal medium supplemented with 5% FCS) and the cells are incubated for 24 hours. On day 3, the medium is replaced with 200  $\mu$ l of fresh medium that has or has not been supplemented with 100ng/ml of VEGF (R&D System) and containing or not containing the compound of the invention and 0.1  $\mu$ Ci [14C]-thymidine. The cells are incubated at 37°C under 5% CO<sub>2</sub> for 4 days. The incorporation of [14C]-thymidine is then quantified by counting the radioactivity.

25 The tests are performed in 3 wells. The final concentration of DMSO in the test is 0.1%. The % of inhibition is calculated as follows:  $[\text{cpm}(+\text{VEGF}) - \text{cpm}(+\text{VEGF} + \text{cpd}) / \text{cpm}(+\text{VEGF}) - \text{cpm}(\text{BM}5\%\text{FCS})] \times 100$ .

2) Inhibition of the production of TF (Tissue factor) by endothelial cells in response to VEGF

30

The endothelial cells are inoculated at 20 000 cells per well in a 96-well plate precoated with attachment factor. After culturing for 8 hours, the medium is changed and the cells are preincubated with the compounds (0.1% DMSO final) in basal medium for 16 hours. The synthesis of the TF (tissue factor) is induced by adding VEGF (100ng/ml final). After incubating for 6 hours, the cells are rinsed and lysed. The tissue factor is then detected by means of the Imubind ELISA test.

35



## 3) Effect of the molecules on the VEGF-independent growth of HDMECs

The HDMECs (5000 cells per well) are inoculated in complete medium in Cytostar (Amersham) 96-well plates precoated with attachment factor (AF, Cascad Biologics) at 37°C, 5% CO<sub>2</sub>, on day 1.

- 5 The whole medium is then removed and the cells are incubated in 200µl of complete medium containing the molecules of the invention and [14C]-thymidine (0.1µCi). The incorporation of the [14C]-thymidine is measured using a Wallac counter after incubating for 3 days. The % of inhibition is calculated as follows:  $\text{[cpm(CM) - cpm (CM + cpd) / cpm(CM)]} \times 100$ .
- 10 Table 5 below gives the results obtained in the above tests for the products indicated as examples in the present patent application.

TABLE 5

Example No.	IC <sub>50</sub> (µM) on inhibition of the phosphorylation of PLCγ by KDR	% of inhibition of the phosphorylation of PLCγ by KDR (product tested at a concentration of 10µM)
14	1.2	
15	0.8	
16	2	
20	3.4	
21	-	35
1	0.47	
2	0.45	
3	-	91.8
4	0.45	
5	-	91.9
6	0.33	
7	0.72	
8	0.67	
9	0.35	

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10	0.34	
11	0.26	
12	0.16	
13	0.61	
18	-	91.2
23	2	

The pharmacological results obtained in the above tests for products indicated in examples in the present application are given in the table 6 below, the degrees of activities of the products being indicated by + signs according to the ranges of activity indicated in the table, i.e.:

+ for an activity of greater than 3 micromolar

5 ++ for an activity of between 0.3 and 3 micromolar

+++ for an activity of less than 0.3 micromolar

TABLE 6

Example No.	Molecular formula	Molecular weight	Activity
			+ : $IC_{50} > 3 \mu M$ ++ : $0.3 \mu M < IC_{50} < 3 \mu M$ +++ : $IC_{50} < 0.3 \mu M$
28	C <sub>22</sub> H <sub>18</sub> N <sub>6</sub> O <sub>3</sub> S	446.49	+++
29	C <sub>20</sub> H <sub>21</sub> N <sub>5</sub> O <sub>2</sub>	363.42	++
30	C <sub>22</sub> H <sub>16</sub> BrN <sub>5</sub> O	446.31	+++
31	C <sub>23</sub> H <sub>19</sub> N <sub>5</sub> O <sub>3</sub> S	445.50	+++
32	C <sub>26</sub> H <sub>19</sub> N <sub>5</sub> O	417.47	++
33	C <sub>23</sub> H <sub>16</sub> F <sub>3</sub> N <sub>5</sub> O	435.41	++
34	C <sub>20</sub> H <sub>15</sub> N <sub>5</sub> O <sub>5</sub> S	373.44	++
35	C <sub>24</sub> H <sub>22</sub> N <sub>6</sub> O	410.48	++
36	C <sub>26</sub> H <sub>30</sub> N <sub>6</sub> O <sub>3</sub>	474.56	++
37	C <sub>22</sub> H <sub>16</sub> N <sub>6</sub> O <sub>3</sub>	412.41	+++
38	C <sub>21</sub> H <sub>16</sub> N <sub>6</sub> O	368.40	++
39	C <sub>22</sub> H <sub>16</sub> BrN <sub>5</sub> O	446.31	++
40	C <sub>23</sub> H <sub>19</sub> N <sub>5</sub> O <sub>2</sub>	397.44	++
41	C <sub>23</sub> H <sub>17</sub> N <sub>5</sub> O <sub>3</sub>	411.42	++
42	C <sub>24</sub> H <sub>17</sub> N <sub>5</sub> O <sub>5</sub> S	423.50	++
43	C <sub>21</sub> H <sub>19</sub> N <sub>7</sub> O	385.43	++
44	C <sub>23</sub> H <sub>16</sub> F <sub>3</sub> N <sub>5</sub> O <sub>2</sub>	451.41	++

45	C23H19N5O	381.44	+++
46	C21H17N5OS	387.46	++
47	C23H16F3N5O	435.41	++
48	C28H21N5O2	459.51	++
49	C23H16F3N5O2	451.41	++
50	C21H23N5O2	377.45	++
51	C20H17N7O	371.40	++
52	C25H23N5O	409.49	++
53	C22H19N5O2	385.43	++
54	C24H17N5OS	423.50	++
55	C26H24N6O3	468.52	++
56	C21H15CIN6O	402.84	+++
57	C24H17N5OS2	455.56	++
58	C24H19N5O2	409.45	+++
59	C23H16N6O	392.42	++
60	C24H16CIN5OS	457.94	+
61	C23H16F3N5O	435.41	+
62	C23H19N5OS	413.50	+++
63	C24H17N5OS	423.50	+++
64	C21H21N5O2	375.43	++
65	C24H19N5O3	425.45	++
66	C20H15N5O2	357.37	++
67	C22H16N6O3	412.41	++
68	C20H15N5OS	373.44	++
69	C24H21N5O	395.47	++
70	C24H19N7O	421.46	++
71	C23H19N5O	381.44	+++
72	C22H16CIN5O	401.86	+++

73	C22H18N6O3S	446.49	++
74	C20H21N5O2	363.42	+
75	C22H16BrN5O	446.31	+
76	C26H19N5O	417.47	+
77	C20H15N5OS	373.44	+
78	C24H22N6O	410.48	+
79	C22H16N6O3	412.41	+
80	C21H16N6O	368.40	++
81	C22H16BrN5O	446.31	+
82	C23H19N5O2	397.44	++
83	C24H17N5OS	423.50	+
84	C28H21N5O2	459.51	+
85	C23H16F3N5O2	451.41	+
86	C21H15ClN6O	402.84	+
87	C24H19N5O2	409.45	+
88	C23H16F3N5O	435.41	+
89	C23H19N5OS	413.50	+++
90	C20H15N5O2	357.37	++
91	C22H16N6O3	412.41	++
92	C24H21N5O	395.47	++
93	C22H16ClN5O	401.86	+
94	C21H15N5O	353.38	++
95	C22H17N5O	367.41	+
96	C23H19N5O	381.44	+
97	C20H14N4	310.36	+
98	C20H12Cl2N4	379.25	+
99	C24H16N4	360.42	+
100	C20H13FN4	328.35	++
101	C20H13ClN4	344.80	+
102	C21H16N4O	340.39	++
103	C20H12ClFN4	362.79	++
104	C20H12Cl2N4	379.25	+
105	C26H16N4S2	448.57	+

106	C26H18N4	386.46	+
107	C21H16N4	324.39	+
108	C21H16N4	324.39	++
109	C21H16N4	324.39	++
110	C18H12N4S	316.39	++
111	C21H13F3N4	378.36	+
112	C21H13F3N4	378.36	+
113	C20H13CIN4	344.80	++
114	C21H16N4O	340.39	++
115	C22H18N4	338.41	++
116	C22H18N4	338.41	+
117	C21H14N4O2	354.37	++
118	C24H22N4	366.47	+
119	C20H20N4	316.41	++
120	C22H18N4O2	370.41	++
121	C20H14N4O	326.36	++
122	C20H14N4O	326.36	++
123	C20H12Cl2N4	379.25	+
124	C21H13F3N4O	394.36	+
125	C22H16N4O	352.40	+
126	C22H14N4S	366.45	+
127	C23H20N4O3	400.44	++
128	C20H14N4OS	358.42	++
129	C22H16N4O	352.40	+
130	C27H20N4O	416.48	+
131	C26H17FN4	404.45	+
132	C22H14N4S	366.45	+
133	C21H16N4O	340.39	++

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134	C22H18N4S	370.48	+
135	C20H12F2N4	346.34	++
136	C21H13F3N4O	394.36	+
137	C21H15FN4	342.38	++
138	C22H15FN4	354.39	+
139	C22H15CIN4	370.84	+
140	C23H18N4O2	382.42	+
141	C21H16N4O	340.39	++
142	C18H12N4O	300.32	++
143	C27H20N4O	416.48	+
144	C23H20N4	352.44	++
145	C21H16N4O2S	388.45	+
146			++
147			++
148			++
149			++
150			++
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212			+
213			+
214			++
215			+
216			+
217			++

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218			+
219			+
220			+
221			+
222			+
223			+
224			++
225			+
226			+
227			+
228			+

### C. IN VITRO TEST PROCEDURES FOR ITK

#### 5 1. Inhibitory effects of compounds on ITK kinase

Inhibitory effects of compounds on ITK kinase were determined using a Fluorescence Polarization assay.

ITK kinase was produced with Baculovirus expression system.

#### 10 1.1 Assay Technology

The assay measures the autophosphorylation of the ITK kinase. The assay is configured based on Fluorescence Polarization method. The enzyme is incubated with ATP and compound. After incubation, a mixture containing fluorescence labeled phospho-peptide tracer and anti-phospho-

15 tyrosine antibody (CoreHTS tyrosine kinase assay kit, P2837, Panvera) is added in order to generate the specific signal that is reversely proportional to the phosphorylation of the enzyme. The phosphorylated ITK generated from the kinase reaction will compete specifically for the antibody and release the fluorescence labeled tracer. Inhibition of ITK kinase activity will result in increased FP value.

#### 20 1.2 Assay Conditions

The assay is run in BD black 384-shallow well plate. For enzyme reaction, the final reagent concentration/well: 16.5nM ITK enzyme, 50μM ATP, 20 mM Hepes (pH 7.5), 0.15M NaCl, 3mM

MgCl<sub>2</sub>, 1mM MnCl<sub>2</sub>, 0.01% Triton X-100, 1mM DTT, 5% glycerol and 0.1% γ-globulin. Incubation time: 45 minutes. Temperature: 25°C. Reaction volume: 10μL. For immuno-reaction, add 10μL of Stop-Detection mixture containing 10mM EDTA, 1:2 dilution of antibody and 1:4 dilution of tracer in 1x dilution buffer (Panvera). Incubation time: 90 minutes at 37°C followed by room temperature 60 minutes.

### 1.3 Assay Procedure:

1. Add 5.0μL ATP solution to each well of the black 384-shallow well plate.
2. Add 1.0μL compounds or 1% DMSO in TBS buffer.
- 10 3. Start Reaction by adding 5.0μL enzyme solution.
4. Incubate at 25°C for 45 minutes.
5. Add 10μL of stop-detection solution.
6. Incubate for 90 minutes at 37°C followed by incubation at room temperature for 60 minutes.
7. Read by LJJ Acquest at FP mode using a fluorescence filter set ( $E_x = 485 \text{ nm}$ ,  $E_m = 535$
- 15 nm) with FL dichroic mirror. Integration Time: 200,000 μs. G factor instrument

$$\text{dependent [G factor} = \frac{(S_{\text{TracerOnly}} - S_{\text{Buffer}})}{(S_{\text{TracerOnly}} + S_{\text{Buffer}})}]$$

- 20 Inhibition of ITK activity with compounds of the invention was expressed as percentage inhibition of control activity determined in the absence of test compounds.

The IC<sub>50</sub> values for the compounds are calculated by plotting the dose-response curves. The IC<sub>50</sub> corresponds to the concentration of compound that induces a 50% inhibition of the kinase activity. Particular compounds of the invention inhibit ITK activity with IC<sub>50</sub>'s in the range 100 micromolar to 1 micromolar.

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### IN VIVO TEST PROCEDURES

#### A. *IN VIVO* TEST PROCEDURES FOR SYK

##### 1. Inhibition of antigen-dependent passive cutaneous anaphylaxis.

- 30 Compounds of the invention were assessed in the Balb/c mouse passive cutaneous anaphylaxis (PCA) model. The model used in these *in vivo* studies mimics relevant features of mast cell-driven antigen-dependent activation and functional responses. These studies demonstrated that compounds of the invention inhibit the increase in edema observed in the sensitized mouse ear following antigen exposure.

Protocol for sensitization and challenge

Balb/c mice were sensitized in the right ear on day 0 with monoclonal anti-DNP IgE (25 $\mu$ g) administered intradermally in the ear pinnae. The left ear was injected with PBS to serve as a control.

- 5 Sixteen to twenty hours after sensitization, mice were antigen challenged with 150  $\mu$ g DNP-albumin administered i.v.

Protocol for dosing and calculation of results

Test drug was administered orally 15-60 minutes before DNP-albumin antigen challenge. Doses of compound were administered at half log divisions between 3 and 100 mg/kg. A control set of mice was administered vehicle alone, and thereafter treated identically. Ear thickness was measured at t= 0, 15, 30 or 60 minutes after DNP-albumin antigen challenge, in both ears, by digital calipers and expressed in units of mm x 0.01. Ear thickness at t=0 was recorded to serve as a baseline. The net increase in both the right and left ear was calculated by subtracting the values at t=0 from those at t=15, 30 or 60 minutes. Percent inhibition of ear edema was then calculated as [ear thickness of control-(ear thickness of right ear-ear thickness of left ear)]/ear thickness of control x 100 for each time point measured.

Results

- 20 (i) The compound demonstrated dose-dependent inhibition of ear edema following oral administration of 3-100 mg/kg. Inhibition of ear edema was observed at t= 15, 30 and 60 minutes after antigen challenge.

These results indicate that compounds of the invention inhibit mast cell activation and functional responses when given orally in a mouse model of passive cutaneous anaphylaxis.

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2. Antigen-induced degranulation of Rat Basophilic leukemia (RBL) cells as measured by [<sup>3</sup>H] 5-hydroxytryptamine (serotonin) release

- 30 2.1 Cell culture, labelling of RBL-2H3 cells and performance of assay.

Method A: For each 24-well culture plate to be set up, 6 x 10<sup>6</sup> cells RBL-2H3 cells were washed and resuspended in 15 mL DMEM-10 containing 25 $\mu$ L of 1mCi/ mL [<sup>3</sup>H]-serotonin (0.5 $\mu$ Ci/ mL final concentration) and 1 $\mu$ g/ mL (15mL) of anti-DNP IgE. 0.5 mL of cell suspension was added into each well of a 24-well plate. Cells were incubated for 2 days at 37°C, until they have reached confluence. The medium was gently aspirated from each well and the cells were then washed with assay buffer. A

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final volume of 200mL of assay buffer (+ or - the test compounds at the appropriate concentrations) was then added to each of three replicate wells. 100ng/ mL of DNP (antigen) was then added to all wells (excluding negative control wells i.e. to measure spontaneous [<sup>3</sup>H]-serotonin release in the absence of receptor cross-linking). The cells were incubated for 30 minutes at 37°C and the reaction was stopped by transferring 100µl of the supernatant from each sample into a liquid scintillation microtitre plate kept on ice. 200µl of scintillant-40 was then added to each well of the microtitre plate and the plate was read on a Topcount Liquid Scintillation Counter.

Method B: RBL-2H3 cells are maintained in T75 flasks at 37°C and 5%CO<sub>2</sub>, and passaged every 3-4 days. To harvest cells, 5 ml trypsin-EDTA is used to rinse the flask once, then 5 ml trypsin is added to each flask, and incubated at room temperature for 2 minutes. Cells are transferred to a tube with 14ml medium, spun down at 1100 rpm RT for 5 minutes and resuspended at 2x10<sup>5</sup>/ml. Cells are sensitized by adding 1µl of DNP-specific IgE (1 mg/ml stock solution) to every 10 ml of cells. 200µl of cells are added to each well of a flat-bottom 96 well plate (40,000 cells/well), and the plate incubated overnight at 37°C and 5%CO<sub>2</sub>. The next day compounds are prepared in 100% DMSO at 10mM. Each compound is then diluted 1:100 in assay buffer and then diluted further in 1% DMSO-assay buffer to obtain final concentrations of 0.03-30µM. 80µl assay buffer (Hank's Balanced Salt Solution with Ca<sup>++</sup>/Mg<sup>++</sup>, 2 mg/ml glucose, 0.03% BSA) is added to each well, followed by 10µl of diluted compound. Incubation follows for 5 minutes. 10µl of DNP-HSA (100ng/ml) is added to each well and incubated at 37°C (no CO<sub>2</sub>) for 30 minutes. As one control, 1% DMSO alone (no compound) is added to a set of wells to determine total release. As another control, buffer is added instead of DNP-HSA to another set of wells to determine the assay background. After 30 minutes incubation, the supernatants are transferred to a new 96-well plate. Add 50µl supernatant to each well of an assay plate. Add 100µl of substrate solution (5 mM PNAG in 0.4M citric acid, 0.2M Na<sub>2</sub>HPO<sub>4</sub>) to each well and incubate at 37°C for 90 minutes. Add 50µl of 0.4 M glycine solution to stop the reaction and the plate is read at 405 nm on a Molecular Devices SpectraMax 250 plate reader.

## 2.2 Calculation of results

### Method A

- (i) The mean ± s.e.m. of each set of triplicate wells was calculated.
- (ii) Maximum response was the positive control wells containing antigen (10ng/mL) but no compound.
- (iii) Minimum response was the control wells containing no antigen and no compound.
- (iv) Using these values as the maximum (100%) and minimum (0%) values respectively, the data was normalised to give a percentage of the maximum response.

(v) A dose response curve was plotted and the IC<sub>50</sub> of the compound was calculated.

#### Method B

(i) The mean  $\pm$  SD of each set of triplicate wells was calculated.

5 (ii) Maximum response was the positive control wells containing antigen (100ng/mL) but no compound.

(iii) Minimum response was the control wells containing buffer (no antigen) and no compound.

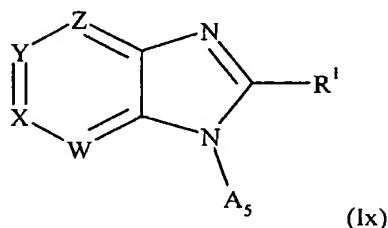
(iv) Using these values as the maximum (100%) and minimum (0%) values respectively, the experimental data was calculated to yield a percentage of the maximum response (designated %

10 control).

(v) A dose response curve was plotted and the IC<sub>50</sub> of the compound was calculated using Prism GraphPad software and nonlinear least squares regression analysis.

WHAT IS CLAIMED IS:

1. A pharmaceutical composition comprising a compound of general formula (Ix)



wherein

X represents C-R<sup>2</sup> and W, Y and Z, which may be identical or different, represent CH or CR<sup>3</sup>; or

W represents CH, X represents N, Y represents CH or CR<sup>3</sup>, and Z represents CH or CR<sup>3</sup>; or

W represents N, X represents CH or CR<sup>2</sup>, Y represents CH and CR<sup>3</sup>, and Z represents CH or CR<sup>3</sup>; or

- 10 W represents N, X represents CH or CR<sup>2</sup>, Y represents N, and Z is CH or CR<sup>3</sup>; or

W represents N, X represents CH or CR<sup>2</sup>, Y represents CH or CR<sup>3</sup>, and Z represents N; or

W represents N, X represents N, Y represents CH or CR<sup>3</sup>, and Z represents CH or CR<sup>3</sup>;

A<sub>5</sub> represents H or alkyl;

R<sup>1</sup> represents aryl or heteroaryl, each optionally substituted by one or more groups selected from

- 15 carboxy, cyano, halo, haloalkyl, hydroxy, nitro, R<sup>4</sup>, -C(=O)R<sup>4</sup>, -C(=O)NY<sup>1</sup>Y<sup>2</sup>, -C(=O)OR<sup>4</sup>,  
-N(R<sup>6</sup>)C(=O)R<sup>4</sup>, -N(R<sup>6</sup>)C(=O)NY<sup>1</sup>Y<sup>2</sup>, -N(R<sup>6</sup>)C(=O)OR<sup>4</sup>, -N(R<sup>6</sup>)SO<sub>2</sub>R<sup>4</sup>, -N(R<sup>6</sup>)SO<sub>2</sub>NY<sup>1</sup>Y<sup>2</sup>,  
-NY<sup>1</sup>Y<sup>2</sup>, -OR<sup>4</sup>, -OCF<sub>2</sub>H, -OCF<sub>3</sub>, -OC(=O)R<sup>4</sup>, -OC(=O)NY<sup>1</sup>Y<sup>2</sup>, -OS(O)<sub>n</sub>R<sup>4</sup>, -S(O)<sub>n</sub>R<sup>4</sup>,  
-S(O)<sub>n</sub>NY<sup>1</sup>Y<sup>2</sup> and -S(O)<sub>n</sub>OR<sup>4</sup>;

R<sup>2</sup> and R<sup>3</sup> are such that:

- 20 R<sup>2</sup> and R<sup>3</sup>, which may be identical or different, represent H, carboxy, cyano, halo, haloalkyl, hydroxy,  
nitro, R<sup>4</sup>, -C(=O)R<sup>4</sup>, -C(=O)NY<sup>1</sup>Y<sup>2</sup>, -C(=O)OR<sup>4</sup>, -NY<sup>1</sup>Y<sup>2</sup>, -N(R<sup>6</sup>)C(=O)R<sup>4</sup>, -N(R<sup>6</sup>)C(=O)NY<sup>1</sup>Y<sup>2</sup>,  
-N(R<sup>6</sup>)C(=O)OR<sup>4</sup>, -N(R<sup>6</sup>)SO<sub>2</sub>R<sup>4</sup>, -N(R<sup>6</sup>)SO<sub>2</sub>NY<sup>1</sup>Y<sup>2</sup>, -OR<sup>4</sup>, -OCF<sub>2</sub>H, -OCF<sub>3</sub>, -OC(=O)R<sup>4</sup>,  
-OC(=O)NY<sup>1</sup>Y<sup>2</sup>, -S(O)<sub>n</sub>R<sup>4</sup>, -S(O)<sub>n</sub>NY<sup>1</sup>Y<sup>2</sup> or -S(O)<sub>n</sub>OR<sup>4</sup>; or

R<sup>2</sup> represents H, carboxy, cyano, halo, haloalkyl, hydroxy, nitro, R<sup>4</sup>, -C(=O)R<sup>4</sup>, -C(=O)NY<sup>1</sup>Y<sup>2</sup>,

- 25 -C(=O)OR<sup>4</sup>, -NY<sup>1</sup>Y<sup>2</sup>, -N(R<sup>6</sup>)C(=O)R<sup>4</sup>, -N(R<sup>6</sup>)C(=O)NY<sup>1</sup>Y<sup>2</sup>, -N(R<sup>6</sup>)C(=O)OR<sup>4</sup>, -N(R<sup>6</sup>)SO<sub>2</sub>R<sup>4</sup>,  
-N(R<sup>6</sup>)SO<sub>2</sub>NY<sup>1</sup>Y<sup>2</sup>, -OR<sup>4</sup>, -OCF<sub>2</sub>H, -OCF<sub>3</sub>, -OC(=O)R<sup>4</sup>, -OC(=O)NY<sup>1</sup>Y<sup>2</sup>, -S(O)<sub>n</sub>R<sup>4</sup>, -S(O)<sub>n</sub>NY<sup>1</sup>Y<sup>2</sup>  
or -S(O)<sub>n</sub>OR<sup>4</sup> and R<sup>3</sup> represents alkyl, haloalkyl, halogen and OR<sup>6</sup>; or

R<sup>2</sup> and R<sup>3</sup> groups on adjacent carbon atoms may form a 5- to 6-membered carbon-based ring containing one or more heteroatoms, which may be identical or different, chosen from O, N and S, and which may be optionally substituted by alkyl;

R<sup>4</sup> is alkyl, alkenyl, alkynyl, cycloalkyl, heterocycloalkyl, aryl or heteroaryl, each optionally

- 5 substituted with one or more substituents selected from alkyl, aryl, cycloalkyl, heteroaryl, heterocycloalkyl, halo, hydroxy, hydroxyalkyl, -C(=O)NY<sup>3</sup>Y<sup>4</sup>, -C(=O)OR<sup>6</sup>, -N(R<sup>6</sup>)C(=O)NY<sup>1</sup>Y<sup>2</sup>, -NY<sup>1</sup>Y<sup>2</sup>, -OR<sup>5</sup> or alkyl substituted by -NY<sup>3</sup>Y<sup>4</sup>;

R<sup>5</sup> is alkyl, alkenyl, aryl, arylalkyl, cycloalkyl, cycloalkylalkyl, heteroaryl, heteroarylalkyl, heterocycloalkyl or heterocycloalkylalkyl;

- 10 R<sup>6</sup> is alkyl, alkenyl, aryl, arylalkyl, cycloalkyl, cycloalkylalkyl, heteroaryl, heteroarylalkyl, heterocycloalkyl or heterocycloalkylalkyl;

n is zero or an integer 1 or 2;

Y<sup>1</sup> and Y<sup>2</sup> are independently hydrogen, alkenyl, aryl, cycloalkyl, heteroaryl, heterocycloalkyl, heterocycloalkylalkyl or alkyl optionally substituted by one or more groups selected from cyano, aryl,

- 15 heteroaryl, hydroxy, -C(=O)OR<sup>6</sup>, -C(=O)NY<sup>3</sup>Y<sup>4</sup>, -NY<sup>3</sup>Y<sup>4</sup> and -OR<sup>5</sup>, or the group -NY<sup>1</sup>Y<sup>2</sup> may form a cyclic amine;

Y<sup>3</sup> and Y<sup>4</sup> are independently hydrogen, alkenyl, alkyl, aryl, arylalkyl, cycloalkyl, heteroaryl or heteroarylalkyl; or the group -NY<sup>3</sup>Y<sup>4</sup> may form a cyclic amine;

where

- 20 all the alkyl, alk, alkenyl, cycloalkyl, heterocycloalkyl, aryl, arylalkyl, heteroaryl and heteroarylalkyl radicals present in the above radicals are optionally substituted with one or more radicals chosen from halogen atoms and hydroxyl, cyano, alkyl, alkoxy, acylamino (NH-COalk), -C(=O)OR<sup>6</sup>, -C(=O)R<sup>6</sup>, hydroxyalkyl, carboxyalkyl, S(O)<sub>n</sub>-alk, S(O)<sub>n</sub>-NH<sub>2</sub>, S(O)<sub>n</sub>-NH(alk), S(O)<sub>n</sub>-N(alk)<sub>2</sub>, CF<sub>3</sub>, OCF<sub>3</sub>, NO<sub>2</sub>, arylalkoxy, aryl, heteroaryl, aryloxy, aryloxyalkyl, -C(=O)-NY<sup>3</sup>Y<sup>4</sup> and NY<sup>3</sup>Y<sup>4</sup> radicals, the latter
- 25 radicals containing alkyl, aryl and heteroaryl being themselves optionally substituted with one or more radicals chosen from halogen atoms and alkyl radicals, free, salified or esterified carboxyl radicals and acylamino radicals NH-C(O)R<sup>5</sup>;

or an N-oxide, prodrug, acid bioisostere, pharmaceutically acceptable salt or solvate of such compound; or an N-oxide, prodrug, or acid bioisostere of such salt or solvate; together with one or

- 30 more pharmaceutically acceptable carriers or excipients.

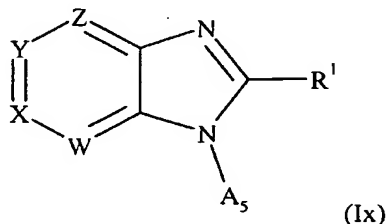
2. A pharmaceutical composition according to claim 1 wherein

R<sup>2</sup> and R<sup>3</sup> form a group selected from -O-CH<sub>2</sub>-O-, -O-CH<sub>2</sub>-CH<sub>2</sub>-O-, -CH<sub>2</sub>-O-CH<sub>2</sub>-,



-CH<sub>2</sub>-N(R<sup>14</sup>)-CH<sub>2</sub>-, -CH<sub>2</sub>-CH<sub>2</sub>-CH<sub>2</sub>-, -CH<sub>2</sub>-C(CH<sub>3</sub>)<sub>2</sub>-CH<sub>2</sub>-, -CH<sub>2</sub>-O-CH<sub>2</sub>-CH<sub>2</sub>-,  
 -CH<sub>2</sub>-N(R<sup>14</sup>)-CH<sub>2</sub>-CH<sub>2</sub>-, -CH<sub>2</sub>-CH<sub>2</sub>-CH<sub>2</sub>-CH<sub>2</sub>-, -CH<sub>2</sub>-C(CH<sub>3</sub>)<sub>2</sub>-CH<sub>2</sub>-CH<sub>2</sub>-, -CH=CH-CH=CH-,  
 -N=CH-CH=CH-, -CH=N-CH=CH-, -CH=CH-N=CH- and -CH=CH-CH=N, where R<sup>14</sup> is H or alkyl.

- 5 3. A compound of general formula (Ix)



wherein

- X represents C-R<sup>2</sup> and W, Y and Z, which may be identical or different, represent CH or CR<sup>3</sup>; or  
 10 W represents CH, X represents N, Y represents CH or CR<sup>3</sup>, and Z represents CH or CR<sup>3</sup>; or  
 W represents N, X represents CH or CR<sup>2</sup>, Y represents CH and CR<sup>3</sup>, and Z represents CH or CR<sup>3</sup>; or  
 W represents N, X represents CH or CR<sup>2</sup>, Y represents N, and Z is CH or CR<sup>3</sup>; or  
 W represents N, X represents CH or CR<sup>2</sup>, Y represents CH or CR<sup>3</sup>, and Z represents N; or  
 W represents N, X represents N, Y represents CH or CR<sup>3</sup>, and Z represents CH or CR<sup>3</sup>;  
 15 A<sub>5</sub> represents H or alkyl;

R<sup>1</sup> represents aryl or heteroaryl, each optionally substituted by one or more groups selected from  
 carboxy, cyano, halo, haloalkyl, hydroxy, nitro, R<sup>4</sup>, -C(=O)R<sup>4</sup>, -C(=O)NY<sup>1</sup>Y<sup>2</sup>, -C(=O)OR<sup>4</sup>,  
 -N(R<sup>6</sup>)C(=O)R<sup>4</sup>, -N(R<sup>6</sup>)C(=O)NY<sup>1</sup>Y<sup>2</sup>, -N(R<sup>6</sup>)C(=O)OR<sup>4</sup>, -N(R<sup>6</sup>)SO<sub>2</sub>R<sup>4</sup>, -N(R<sup>6</sup>)SO<sub>2</sub>NY<sup>1</sup>Y<sup>2</sup>,  
 -NY<sup>1</sup>Y<sup>2</sup>, -OR<sup>4</sup>, -OCF<sub>2</sub>H, -OCF<sub>3</sub>, -OC(=O)R<sup>4</sup>, -OC(=O)NY<sup>1</sup>Y<sup>2</sup>, -OS(O)<sub>n</sub>R<sup>4</sup>, -S(O)<sub>n</sub>R<sup>4</sup>,

- 20 -S(O)<sub>n</sub>NY<sup>1</sup>Y<sup>2</sup> and -S(O)<sub>n</sub>OR<sup>4</sup>;

R<sup>2</sup> and R<sup>3</sup> are such that:

- R<sup>2</sup> and R<sup>3</sup>, which may be identical or different, represent H, carboxy, cyano, halo, haloalkyl, hydroxy,  
 nitro, R<sup>4</sup>, -C(=O)R<sup>4</sup>, -C(=O)NY<sup>1</sup>Y<sup>2</sup>, -C(=O)OR<sup>4</sup>, -NY<sup>1</sup>Y<sup>2</sup>, -N(R<sup>6</sup>)C(=O)R<sup>4</sup>, -N(R<sup>6</sup>)C(=O)NY<sup>1</sup>Y<sup>2</sup>,  
 -N(R<sup>6</sup>)C(=O)OR<sup>4</sup>, -N(R<sup>6</sup>)SO<sub>2</sub>R<sup>4</sup>, -N(R<sup>6</sup>)SO<sub>2</sub>NY<sup>1</sup>Y<sup>2</sup>, -OR<sup>4</sup>, -OCF<sub>2</sub>H, -OCF<sub>3</sub>, -OC(=O)R<sup>4</sup>,  
 25 -OC(=O)NY<sup>1</sup>Y<sup>2</sup>, -S(O)<sub>n</sub>R<sup>4</sup>, -S(O)<sub>n</sub>NY<sup>1</sup>Y<sup>2</sup> or -S(O)<sub>n</sub>OR<sup>4</sup>; or

R<sup>2</sup> represents H, carboxy, cyano, halo, haloalkyl, hydroxy, nitro, R<sup>4</sup>, -C(=O)R<sup>4</sup>, -C(=O)NY<sup>1</sup>Y<sup>2</sup>,  
 -C(=O)OR<sup>4</sup>, -NY<sup>1</sup>Y<sup>2</sup>, -N(R<sup>6</sup>)C(=O)R<sup>4</sup>, -N(R<sup>6</sup>)C(=O)NY<sup>1</sup>Y<sup>2</sup>, -N(R<sup>6</sup>)C(=O)OR<sup>4</sup>, -N(R<sup>6</sup>)SO<sub>2</sub>R<sup>4</sup>,

$-N(R^6)SO_2NY^1Y^2$ ,  $-OR^4$ ,  $-OCF_2H$ ,  $-OCF_3$ ,  $-OC(=O)R^4$ ,  $-OC(=O)NY^1Y^2$ ,  $-S(O)_nR^4$ ,  $-S(O)_nNY^1Y^2$  or  $-S(O)_nOR^4$  and  $R^3$  represents alkyl, haloalkyl, halogen and  $OR^6$ ; or

$R^2$  and  $R^3$  groups on adjacent carbon atoms may form a 5- to 6-membered carbon-based ring containing one or more heteroatoms, which may be identical or different, chosen from O, N and S, and which may be optionally substituted by alkyl;

$R^4$  is alkyl, alkenyl, alkynyl, cycloalkyl, heterocycloalkyl, aryl or heteroaryl, each optionally substituted with one or more substituents selected from alkyl, aryl, cycloalkyl, heteroaryl, heterocycloalkyl, halo, hydroxy, hydroxyalkyl,  $-C(=O)NY^3Y^4$ ,  $-C(=O)OR^6$ ,  $-N(R^6)C(=O)NY^1Y^2$ ,  $-NY^1Y^2$ ,  $-OR^5$  or alkyl substituted by  $-NY^3Y^4$ ;

$R^5$  is alkyl, alkenyl, aryl, arylalkyl, cycloalkyl, cycloalkylalkyl, heteroaryl, heteroarylalkyl, heterocycloalkyl or heterocycloalkylalkyl;

$R^6$  is alkyl, alkenyl, aryl, arylalkyl, cycloalkyl, cycloalkylalkyl, heteroaryl, heteroarylalkyl, heterocycloalkyl or heterocycloalkylalkyl;

$n$  is zero or an integer 1 or 2;

$Y^1$  and  $Y^2$  are independently hydrogen, alkenyl, aryl, cycloalkyl, heteroaryl, heterocycloalkyl, heterocycloalkylalkyl or alkyl optionally substituted by one or more groups selected from cyano, aryl, heteroaryl, hydroxy,  $-C(=O)OR^6$ ,  $-C(=O)NY^3Y^4$ ,  $-NY^3Y^4$  and  $-OR^5$ , or the group  $-NY^1Y^2$  may form a cyclic amine;

$Y^3$  and  $Y^4$  are independently hydrogen, alkenyl, alkyl, aryl, arylalkyl, cycloalkyl, heteroaryl or

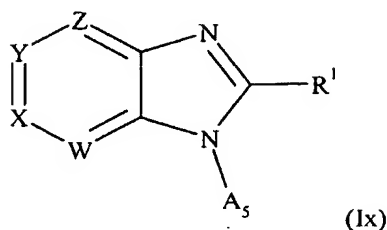
heteroarylalkyl; or the group  $-NY^3Y^4$  may form a cyclic amine; where

all the alkyl, alk, alkenyl, cycloalkyl, heterocycloalkyl, aryl, arylalkyl, heteroaryl and heteroarylalkyl radicals present in the above radicals are optionally substituted with one or more radicals chosen from

halogen atoms and hydroxyl, cyano, alkyl, alkoxy, acylamino ( $NH-COalk$ ),  $-C(=O)OR^6$ ,  $-C(=O)R^6$ , hydroxyalkyl, carboxyalkyl,  $S(O)_n-alk$ ,  $S(O)_n-NH_2$ ,  $S(O)_n-NH(alk)$ ,  $S(O)_n-N(alk)_2$ ,  $CF_3$ ,  $OCF_3$ ,  $NO_2$ , arylalkoxy, aryl, heteroaryl, aryloxy, aryloxyalkyl,  $-C(=O)-NY^3Y^4$  and  $NY^3Y^4$  radicals, the latter radicals containing alkyl, aryl and heteroaryl being themselves optionally substituted with one or more radicals chosen from halogen atoms and alkyl radicals, free, salified or esterified carboxyl radicals and acylamino radicals  $NH-C(O)R^5$ ;

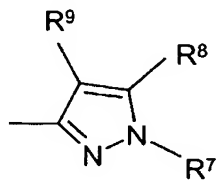
or an N-oxide, prodrug, acid bioisostere, pharmaceutically acceptable salt or solvate of such compound; or an N-oxide, prodrug, or acid bioisostere of such salt or solvate.

4. A compound of formula (Ix)



wherein

- 5 X represents C-R<sup>2</sup> and W, Y and Z, which may be identical or different, represent CH or CR<sup>3</sup>; or W represents CH, X represents N, Y represents CH or CR<sup>3</sup>, and Z represents CH or CR<sup>3</sup>; or W represents N, X represents CH or CR<sup>2</sup>, Y represents CH and CR<sup>3</sup>, and Z represents CH or CR<sup>3</sup>; or W represents N, X represents CH or CR<sup>2</sup>, Y represents N, and Z is CH or CR<sup>3</sup>; or W represents N, X represents CH or CR<sup>2</sup>, Y represents CH or CR<sup>3</sup>, and Z represents N; or
- 10 W represents N, X represents N, Y represents CH or CR<sup>3</sup>, and Z represents CH or CR<sup>3</sup>; A<sub>5</sub> represents H or alkyl;



R<sup>1</sup> is a pyrazolyl moiety

- in which R<sup>7</sup> is hydrogen or alkyl, and R<sup>8</sup> and R<sup>9</sup> are independently selected from hydrogen, carboxy, cyano, halo, haloalkyl, hydroxy, nitro, R<sup>4</sup>, -C(=O)R<sup>4</sup>, -C(=O)NY<sup>1</sup>Y<sup>2</sup>, -C(=O)OR<sup>4</sup>, -N(R<sup>6</sup>)C(=O)R<sup>4</sup>, -N(R<sup>6</sup>)C(=O)NY<sup>1</sup>Y<sup>2</sup>, -N(R<sup>6</sup>)C(=O)OR<sup>4</sup>, -N(R<sup>6</sup>)SO<sub>2</sub>R<sup>4</sup>, -N(R<sup>6</sup>)SO<sub>2</sub>NY<sup>1</sup>Y<sup>2</sup>, -NY<sup>1</sup>Y<sup>2</sup>, -OR<sup>4</sup>, -OC(=O)R<sup>4</sup>, -OC(=O)NY<sup>1</sup>Y<sup>2</sup>, -S(O)<sub>n</sub>R<sup>4</sup> and -S(O)<sub>2</sub>NY<sup>1</sup>Y<sup>2</sup>; or R<sup>8</sup> and R<sup>9</sup> together with the carbon atoms to which they are attached form (i) a 5 to 8 membered carbocyclic ring optionally substituted by one or more carbocyclic ring substituents; (ii) a phenyl ring optionally substituted by one or more aryl group substituents; (iii) a 5 or 6 membered heteroaromatic ring in which one or more of the ring members is/are nitrogen, oxygen or sulfur and which is optionally substituted by one or more groups selected from haloalkyl, hydroxy, halo, cyano, nitro, R<sup>4</sup>, -C(=O)NY<sup>1</sup>Y<sup>2</sup>, -N(R<sup>6</sup>)C(=O)R<sup>4</sup>, -N(R<sup>6</sup>)C(=O)NY<sup>1</sup>Y<sup>2</sup>, -N(R<sup>6</sup>)SO<sub>2</sub>R<sup>4</sup>, -NY<sup>1</sup>Y<sup>2</sup> and -OR<sup>5</sup>; or (iv) a 5 or 6 membered heterocyclic ring optionally substituted by alkyl or oxo, and containing a heteroatom-containing group selected from O, S, SO<sub>2</sub>, and NY<sup>5</sup>, where Y<sup>5</sup> is hydrogen, R<sup>4</sup>, -C(=O)R<sup>4</sup>, -C(=O)NY<sup>1</sup>Y<sup>2</sup>, -C(=O)OR<sup>4</sup> or -SO<sub>2</sub>R<sup>4</sup>;
- 15
- 20

$R^2$  and  $R^3$  are such that:

$R^2$  and  $R^3$ , which may be identical or different, represent H, carboxy, cyano, halo, haloalkyl, hydroxy, nitro,  $R^4$ ,  $-C(=O)R^4$ ,  $-C(=O)NY^1Y^2$ ,  $-C(=O)OR^4$ ,  $-NY^1Y^2$ ,  $-N(R^6)C(=O)R^4$ ,  $-N(R^6)C(=O)NY^1Y^2$ ,  $-N(R^6)C(=O)OR^4$ ,  $-N(R^6)SO_2R^4$ ,  $-N(R^6)SO_2NY^1Y^2$ ,  $-OR^4$ ,  $-OCF_2H$ ,  $-OCF_3$ ,  $-OC(=O)R^4$ ,

5  $-OC(=O)NY^1Y^2$ ,  $-S(O)_nR^4$ ,  $-S(O)_nNY^1Y^2$  or  $-S(O)_nOR^4$ ; or

$R^2$  represents H, carboxy, cyano, halo, haloalkyl, hydroxy, nitro,  $R^4$ ,  $-C(=O)R^4$ ,  $-C(=O)NY^1Y^2$ ,  $-C(=O)OR^4$ ,  $-NY^1Y^2$ ,  $-N(R^6)C(=O)R^4$ ,  $-N(R^6)C(=O)NY^1Y^2$ ,  $-N(R^6)C(=O)OR^4$ ,  $-N(R^6)SO_2R^4$ ,  $-N(R^6)SO_2NY^1Y^2$ ,  $-OR^4$ ,  $-OCF_2H$ ,  $-OCF_3$ ,  $-OC(=O)R^4$ ,  $-OC(=O)NY^1Y^2$ ,  $-S(O)_nR^4$ ,  $-S(O)_nNY^1Y^2$  or  $-S(O)_nOR^4$  and  $R^3$  represents alkyl, haloalkyl, halogen and  $OR^6$ ; or

10  $R^2$  and  $R^3$  groups on adjacent carbon atoms may form a 5- to 6-membered carbon-based ring containing one or more heteroatoms, which may be identical or different, chosen from O, N and S, and which may be optionally substituted by alkyl;

$R^4$  is alkyl, alkenyl, alkynyl, cycloalkyl, heterocycloalkyl, aryl or heteroaryl, each optionally substituted with one or more substituents selected from alkyl, aryl, cycloalkyl, heteroaryl,

15 heterocycloalkyl, halo, hydroxy, hydroxyalkyl,  $-C(=O)NY^3Y^4$ ,  $-C(=O)OR^6$ ,  $-N(R^6)C(=O)NY^1Y^2$ ,  $-NY^1Y^2$ ,  $-OR^5$  or alkyl substituted by  $-NY^3Y^4$ ;

$R^5$  is alkyl, alkenyl, aryl, arylalkyl, cycloalkyl, cycloalkylalkyl, heteroaryl, heteroarylalkyl, heterocycloalkyl or heterocycloalkylalkyl;

$R^6$  is alkyl, alkenyl, aryl, arylalkyl, cycloalkyl, cycloalkylalkyl, heteroaryl, heteroarylalkyl,

20 heterocycloalkyl or heterocycloalkylalkyl;

$n$  is zero or an integer 1 or 2;

$Y^1$  and  $Y^2$  are independently hydrogen, alkenyl, aryl, cycloalkyl, heteroaryl, heterocycloalkyl, heterocycloalkylalkyl or alkyl optionally substituted by one or more groups selected from cyano, aryl, heteroaryl, hydroxy,  $-C(=O)OR^6$ ,  $-C(=O)NY^3Y^4$ ,  $-NY^3Y^4$  and  $-OR^5$ , or the group  $-NY^1Y^2$  may form  
25 a cyclic amine;

$Y^3$  and  $Y^4$  are independently hydrogen, alkenyl, alkyl, aryl, arylalkyl, cycloalkyl, heteroaryl or heteroarylalkyl; or the group  $-NY^3Y^4$  may form a cyclic amine;

where

all the alkyl, alk, alkenyl, cycloalkyl, heterocycloalkyl, aryl, arylalkyl, heteroaryl and heteroarylalkyl

30 radicals present in the above radicals are optionally substituted with one or more radicals chosen from halogen atoms and hydroxyl, cyano, alkyl, alkoxy, acylamino ( $NH-COalk$ ),  $-C(=O)OR^6$ ,  $-C(=O)R^6$ , hydroxyalkyl, carboxyalkyl,  $S(O)_n-alk$ ,  $S(O)_n-NH_2$ ,  $S(O)_n-NH(alk)$ ,  $S(O)_n-N(alk)_2$ ,  $CF_3$ ,  $OCF_3$ ,  $NO_2$ ,

arylalkoxy, aryl, heteroaryl, aryloxy, aryloxyalkyl,  $-C(=O)-NY^3Y^4$  and  $NY^3Y^4$  radicals, the latter radicals containing alkyl, aryl and heteroaryl being themselves optionally substituted with one or more radicals chosen from halogen atoms and alkyl radicals, free, salified or esterified carboxyl radicals and acylamino radicals  $NH-C(O)R^5$ ;

- 5 or an N-oxide, prodrug, acid bioisostere, pharmaceutically acceptable salt or solvate of such compound; or an N-oxide, prodrug, or acid bioisostere of such salt or solvate;  
provided that the compound is other than 2-(2H-pyrazol-3-yl)-1H-benzoimidazole; 2-(5-methyl-2H-pyrazol-3-yl)-1H-benzoimidazole; 5-methyl-6-[2-(2H-pyrazol-3-yl)-3H-benzoimidazol-5-yl]-4,5-dihydro-2H-pyridazin-3-one; 5-methyl-6-[2-(2H-pyrazol-3-yl)-1H-benzoimidazol-4-yl]-4,5-dihydro-
- 10 2H-pyridazin-3-one; 3,5-bis(benzimidazol-2-yl)-1H-pyrazole; 5,6-dimethyl-2-(5-methyl-1H-pyrazol-3-yl)-1H-benzoimidazole; 6-methyl-2-(5-methyl-1H-pyrazol-3-yl)-1H-benzoimidazole; 5,6-dichloro-2-(5-methyl-1H-pyrazol-3-yl)-1H-benzoimidazole; 5-nitro-2-(5-methyl-1H-pyrazol-3-yl)-1H-benzoimidazole; 2-(5-methyl-1H-pyrazol-3-yl)-1H-benzoimidazole-5-carboxylic acid; 2-(5-phenyl-1H-pyrazol-3-yl)-1H-benzoimidazole; 5,6-dimethyl-2-(5-phenyl-1H-pyrazol-3-yl)-1H-
- 15 benzoimidazole; 5-methyl-2-(5-phenyl-1H-pyrazol-3-yl)-1H-benzoimidazole; 6-chloro-2-(5-methyl-1H-pyrazol-3-yl)-1H-benzoimidazole; 5-chloro-2-(5-phenyl-1H-pyrazol-3-yl)-1H-benzoimidazole; 5,6-dichloro-2-(5-phenyl-1H-pyrazol-3-yl)-1H-benzoimidazole; N-[2-(5-isoquinolin-4-yl)-1H-indazol-3-yl]-3H-benzoimidazol-5-yl]-methanesulfonamide; 3-(1H-benzoimidazol-2-yl)-5-(1H-indazol-4-yl)-1H-indazole, 3-[3-(1H-benzoimidazol-2-yl)-1H-indazol-5-yl]-2-methoxyphenol; 4-[3-(1H-
- 20 benzoimidazol-2-yl)-1H-indazol-5-yl]isoquinoline; 4-{3-[6-(4-methyl-piperazin-1-yl)-1H-benzoimidazol-2-yl]-1H-indazol-5-yl}-isoquinoline; 4-[3-(4-chloro-1H-benzoimidazol-2-yl)-1H-indazol-5-yl]-isoquinoline; 4-[2-(1H-indazol-3-yl)-1H-benzoimidazol-5-yl]-phenol; 3-[5-(4-methoxy-phenyl)-1H-benzoimidazol-2-yl]-1H-indazole; 3-[5-(4-methoxy-phenyl)-1H-benzoimidazol-2-yl]-1H-indazole; 3-[5-(3-methoxy-phenyl)-1H-benzoimidazol-2-yl]-1H-indazole; 3-(1H-benzoimidazol-2-yl)-5-
- 25 phenyl-1H-indazole; 2-(4-bromo-1-methyl-1H-pyrazol-3-yl)-1H-benzoimidazole; 2-(5-*tert*-butyl-1H-pyrazol-3-yl)-1H-benzoimidazole; 3-(1H-benzoimidazol-2-yl)-6-(3-methoxy-phenyl)-1H-indazole; 3-(1H-benzoimidazol-2-yl)-1H-indazole-6-carboxylic acid; 5-{[3-(1H-benzoimidazol-2-yl)-1H-indazole-6-carbonyl]-amino}-2-hydroxy-benzoic acid methyl ester; 5-{[3-(1H-benzoimidazol-2-yl)-1H-indazole-6-carbonyl]-amino}-furan-2-carboxylic acid methyl ester; 3-(1H-benzoimidazol-2-yl)-1H-indazole-6-
- 30 carboxylic acid (3-hydroxy-4-methoxy-phenyl)-amide; 3-(1H-benzoimidazol-2-yl)-1H-indazole-6-carboxylic acid (5-hydroxy-1H-pyrazol-3-yl)-amide; 3-(1H-benzoimidazol-2-yl)-1H-indazole-6-carboxylic acid (1H-pyrazol-3-yl)-amide; [3-(1H-benzoimidazol-2-yl)-1H-indazol-6-yl]-[4-(2-hydroxy-ethyl)-piperidin-1-yl]-methanone; 3-(1H-benzoimidazol-2-yl)-1H-indazole-6-carboxylic acid (9H-purin-6-yl)-amide; 3-(1H-benzoimidazol-2-yl)-1H-indazole-6-carboxylic acid dimethylamide; [3-(1H-
- 35 benzoimidazol-2-yl)-1H-indazol-6-yl]-morpholin-4-yl-methanone; 3-(1H-benzoimidazol-2-yl)-1H-

- indazole-6-carboxylic acid pyrazin-2-ylamide; 3-(1H-benzoimidazol-2-yl)-1H-indazole-6-carboxylic acid cyclohexylamide; 3-(1H-benzoimidazol-2-yl)-1H-indazole-6-carboxylic acid (1H-indazol-5-yl)-amide; [3-(1H-benzoimidazol-2-yl)-1H-indazol-6-yl]-pyrrolidin-1-yl-methanone; 3-(1H-benzoimidazol-2-yl)-1H-indazole-6-carboxylic acid (1H-indazol-5-yl)-amide; [3-(1H-benzoimidazol-2-yl)-1H-indazol-6-yl]-[4-(furan-2-carbonyl)-piperazin-1-yl]-methanone; [3-(1H-benzoimidazol-2-yl)-1H-indazol-6-yl]-  
5 (4-methyl-piperazin-1-yl)-methanone; 1-{4-[3-(1H-benzoimidazol-2-yl)-1H-indazole-6-carbonyl]-piperazin-1-yl}-ethanone; 3-(1H-benzoimidazol-2-yl)-1H-indazole-6-carboxylic acid (6-methoxy-pyridin-3-yl)-amide; 3-(1H-benzoimidazol-2-yl)-1H-indazole-6-carboxylic acid (3-hydroxy-phenyl)-amide; 3-(1H-benzoimidazol-2-yl)-1H-indazole-6-carboxylic acid pyridin-4-ylamide; 3-(1H-  
10 benzoimidazol-2-yl)-1H-indazole-6-carboxylic acid (2-morpholin-4-yl-ethyl)-amide; 3-(1H-benzoimidazol-2-yl)-1H-indazole-6-carboxylic acid (2-hydroxy-ethyl)-methyl-amide; 3-[[3-(1H-benzoimidazol-2-yl)-1H-indazole-6-carbonyl]-amino]-butyric acid ethyl ester; 3-(1H-benzoimidazol-2-yl)-1H-indazole-6-carboxylic acid (3-hydroxy-propyl)-amide; 3-(1H-benzoimidazol-2-yl)-1H-indazole-6-carboxylic acid phenylamide; 3-(1H-benzoimidazol-2-yl)-1H-indazole-6-carboxylic acid pyridin-3-  
15 ylamide; 3-(6-methoxy-1H-benzoimidazol-2-yl)-1H-indazole-6-carboxylic acid (4-hydroxy-phenyl)-amide; 3-(1H-benzoimidazol-2-yl)-6-pyridin-4-yl-1H-indazole; 3-(5-chloro-1H-benzoimidazol-2-yl)-1H-indazole-6-carboxylic acid (4-hydroxy-phenyl)-amide; 3-(5,6-dimethoxy-1H-benzoimidazol-2-yl)-1H-indazole-6-carboxylic acid (4-hydroxy-phenyl)-amide; 3-(5-fluoro-1H-benzoimidazol-2-yl)-1H-indazole-6-carboxylic acid (4-hydroxy-phenyl)-amide; 3-(6-trifluoromethyl-1H-benzoimidazol-2-yl)-  
20 1H-indazole-6-carboxylic acid (4-hydroxy-phenyl)-amide; 3-(6-*tert*-butyl-1H-benzoimidazol-2-yl)-1H-indazole-6-carboxylic acid (4-hydroxy-phenyl)-amide; 3-(6,7-dimethyl-1H-benzoimidazol-2-yl)-1H-indazole-6-carboxylic acid (4-hydroxy-phenyl)-amide; 3-(5,6-dichloro-1H-benzoimidazol-2-yl)-1H-indazole-6-carboxylic acid (4-hydroxy-phenyl)-amide; 3-(5,6-difluoro-1H-benzoimidazol-2-yl)-1H-indazole-6-carboxylic acid (4-hydroxy-phenyl)-amide; 3-(1H-benzoimidazol-2-yl)-1H-indazole-6-  
25 carboxylic acid (3-fluoro-4-hydroxy-phenyl)-amide; 3-(1H-benzoimidazol-2-yl)-1H-indazole-6-carboxylic acid amide; 3-(1H-benzoimidazol-2-yl)-1H-indazole-6-carboxylic acid (4-hydroxy-2,3-dimethyl-phenyl)-amide; 3-(1H-benzoimidazol-2-yl)-1H-indazole-6-carboxylic acid (4-hydroxy-2-methyl-phenyl)-amide; 3-(1H-benzoimidazol-2-yl)-1H-indazole-6-carboxylic acid (4-hydroxy-phenyl)-amide; 3-(1H-benzoimidazol-2-yl)-1H-indazole-6-carboxylic acid cyclopropylamide; 2-[6-(4-hydroxy-  
30 2-methoxy-phenyl)-1H-indazol-3-yl]-3H-benzoimidazole-5-sulfonic acid amide; 4-[3-(6-dimethylamino-1H-benzoimidazol-2-yl)-1H-indazol-6-yl]-3-methoxy-phenol; 2-[6-(4-hydroxy-2-methoxy-phenyl)-1H-indazol-3-yl]-3H-benzoimidazole-5-carboxylic acid methylamide; 3-methoxy-4-{3-[6-(4-methyl-piperazin-1-yl)-1H-benzoimidazol-2-yl]-1H-indazol-6-yl}-phenol; 2-[6-(4-hydroxy-2-methoxy-phenyl)-1H-indazol-3-yl]-3H-benzoimidazole-5-carboxylic acid (2-morpholin-4-yl-ethyl)-  
35 amide; 4-[3-(1H-imidazo[4,5-c]pyridin-2-yl)-1H-indazol-6-yl]-3-methoxy-phenol; 3-[3-(1H-benzoimidazol-2-yl)-1H-indazol-6-yl]-2-methoxy-phenol; 3-[3-(1H-benzoimidazol-2-yl)-1H-indazol-6-

yl]-phenol; 4-[3-(1H-benzoimidazol-2-yl)-1H-indazol-6-yl]-3,5-dimethyl-phenol; 4-[3-(1H-benzoimidazol-2-yl)-1H-indazol-6-yl]-3-phenoxy-phenol; 4-[3-(1H-benzoimidazol-2-yl)-1H-indazol-6-yl]-benzene-1,3-diol; 4-[3-(1H-benzoimidazol-2-yl)-1H-indazol-6-yl]-3-methoxy-phenol; 4-[3-(1H-benzoimidazol-2-yl)-1H-indazol-6-yl]-2-methoxy-phenol; N-{3-[3-(1H-benzoimidazol-2-yl)-1H-indazole-6-carbonyl]-phenyl}-benzamide; 6-[2-(1,5-dimethyl-1H-pyrazol-3-yl)-3H-benzoimidazol-5-yl]-5-methyl-4,5-dihydro-2H-pyridazin-3-one; 5-methyl-6-[2-(1-methyl-1H-pyrazol-3-yl)-3H-benzoimidazol-5-yl]-4,5-dihydro-2H-pyridazin-3-one; 8-(1,5-dimethyl-1H-pyrazol-3-yl)-7H-purine; 2-(1,5-dimethyl-1H-pyrazol-3-yl)-1H-imidazo[4,5-b]pyridine or 2-(5-methyl-1H-pyrazol-3-yl)-1H-imidazo[4,5-b]pyridine.

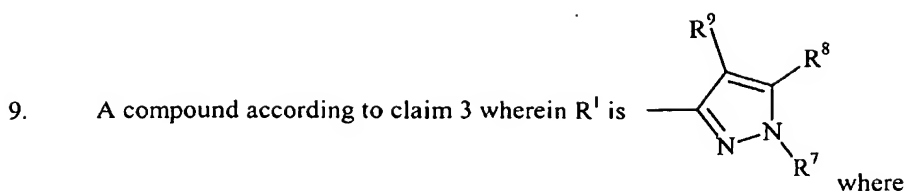
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5. A compound according to claim 3 wherein  $R^1$  is optionally substituted heteroaryl.

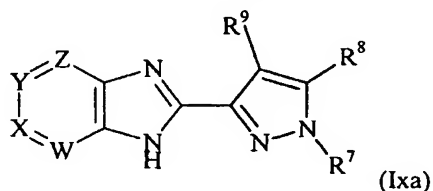
6. A compound according to claim 5 wherein  $R^1$  is optionally substituted dihydrofuropyrazolyl, imidazolyl, indazolyl, indolyl, isoxazolyl, oxodihydropyridazinyl, oxodihydropyridinopyrazolyl, oxodihydropyridinyl, oxotetrahydropyrrolopyrazolyl, pyrazolyl, thiazolyl, thienopyrazolyl, tetrahydrocyclopentapyrazolyl, tetrahydroindazolyl, tetrahydropyranopyrazolyl, tetrahydropyridinopyrazolyl, tetrahydropyrrolopyrazolyl or triazolyl.

7. A compound according to claim 5 heteroaryl is optionally substituted by one or more groups selected from carboxy, cyano, halo, haloalkyl, hydroxy, nitro,  $R^4$ ,  $-C(=O)R^4$ ,  $-C(=O)NY^1Y^2$ ,  $-C(=O)OR^4$ ,  $-N(R^6)C(=O)R^4$ ,  $-N(R^6)C(=O)NY^1Y^2$ ,  $-N(R^6)C(=O)OR^4$ ,  $-N(R^6)SO_2R^4$ ,  $-N(R^6)SO_2NY^1Y^2$ ,  $-NY^1Y^2$ ,  $-OR^4$ ,  $-OCF_2H$ ,  $-OCF_3$ ,  $-OC(=O)R^4$ ,  $-OC(=O)NY^1Y^2$ ,  $-S(O)_nR^4$  and  $-S(O)_2NY^1Y^2$ .

8. A compound according to claim 6 wherein dihydrofuropyrazolyl, imidazolyl, indazolyl, indolyl, isoxazolyl, oxodihydropyridazinyl, oxodihydropyridinopyrazolyl, oxodihydropyridinyl, oxotetrahydropyrrolopyrazolyl, pyrazolyl, thiazolyl, thienopyrazolyl, tetrahydrocyclopentapyrazolyl, tetrahydroindazolyl, tetrahydropyranopyrazolyl, tetrahydropyridinopyrazolyl, tetrahydropyrrolopyrazolyl or triazolyl is optionally substituted by one or more groups selected from carboxy, cyano, halo, haloalkyl, hydroxy, nitro,  $R^4$ ,  $-C(=O)R^4$ ,  $-C(=O)NY^1Y^2$ ,  $-C(=O)OR^4$ ,  $-N(R^6)C(=O)R^4$ ,  $-N(R^6)C(=O)NY^1Y^2$ ,  $-N(R^6)C(=O)OR^4$ ,  $-N(R^6)SO_2R^4$ ,  $-N(R^6)SO_2NY^1Y^2$ ,  $-NY^1Y^2$ ,  $-OR^4$ ,  $-OCF_2H$ ,  $-OCF_3$ ,  $-OC(=O)R^4$ ,  $-OC(=O)NY^1Y^2$ ,  $-S(O)_nR^4$  and  $-S(O)_2NY^1Y^2$ .



- R<sup>7</sup> is hydrogen or alkyl, and R<sup>8</sup> and R<sup>9</sup> are independently selected from hydrogen, carboxy, cyano, halo, haloalkyl, hydroxy, nitro, R<sup>4</sup>, -C(=O)R<sup>4</sup>, -C(=O)NY<sup>1</sup>Y<sup>2</sup>, -C(=O)OR<sup>4</sup>, -N(R<sup>6</sup>)C(=O)R<sup>4</sup>, -N(R<sup>6</sup>)C(=O)NY<sup>1</sup>Y<sup>2</sup>, -N(R<sup>6</sup>)C(=O)OR<sup>4</sup>, -N(R<sup>6</sup>)SO<sub>2</sub>R<sup>4</sup>, -N(R<sup>6</sup>)SO<sub>2</sub>NY<sup>1</sup>Y<sup>2</sup>, -NY<sup>1</sup>Y<sup>2</sup>, -OR<sup>4</sup>, -OC(=O)R<sup>4</sup>, -OC(=O)NY<sup>1</sup>Y<sup>2</sup>, -S(O)<sub>n</sub>R<sup>4</sup> and -S(O)<sub>2</sub>NY<sup>1</sup>Y<sup>2</sup>; or R<sup>8</sup> and R<sup>9</sup> together with the carbon atoms to which they are attached form (i) a 5 to 8 membered carbocyclic ring optionally substituted by one or more carbocyclic ring substituents; (ii) a phenyl ring optionally substituted by one or more aryl group substituents; (iii) a 5 or 6 membered heteroaromatic ring in which one or more of the ring members is/are nitrogen, oxygen or sulfur and which is optionally substituted by one or more groups selected from haloalkyl, hydroxy, halo, cyano, nitro, R<sup>4</sup>, -C(=O)NY<sup>1</sup>Y<sup>2</sup>, -N(R<sup>6</sup>)C(=O)R<sup>4</sup>, -N(R<sup>6</sup>)C(=O)NY<sup>1</sup>Y<sup>2</sup>, -N(R<sup>6</sup>)SO<sub>2</sub>R<sup>4</sup>, -NY<sup>1</sup>Y<sup>2</sup> and -OR<sup>5</sup>; or (iv) a 5 or 6 membered heterocyclic ring optionally substituted by alkyl or oxo, and containing a heteroatom-containing group selected from O, S, SO<sub>2</sub>, and NY<sup>5</sup>, where Y<sup>5</sup> is hydrogen, R<sup>4</sup>, -C(=O)R<sup>4</sup>, -C(=O)NY<sup>1</sup>Y<sup>2</sup>, -C(=O)OR<sup>4</sup> or -SO<sub>2</sub>R<sup>4</sup>.
10. A compound according to any one of claims 3 to 9 wherein W is CH; X is CR<sup>2</sup>; Y is CH or CR<sup>3</sup>; and Z is CH or CR<sup>3</sup>.
11. A compound according to any one of claims 3 to 9 wherein W is CH; when X is N; Y is CH or CR<sup>3</sup>; and Z is CH or CR<sup>3</sup>.
12. A compound according to any one of claims 3 to 9 wherein W is N; X is CH or CR<sup>2</sup>; Y is CH or CR<sup>3</sup>; and Z is CH or CR<sup>3</sup>.
13. A compound according to any one of claims 3 to 9 wherein W is N; X is CH or CR<sup>2</sup>; Y is CH or CR<sup>3</sup>; and Z is N.
14. A compound according to claim 3 of formula (Ixa)



wherein



$R^7$  is hydrogen or alkyl;

$R^8$  and  $R^9$  are independently selected from hydrogen, carboxy, cyano, halo, haloalkyl, hydroxy, nitro,

$R^4$ ,  $-C(=O)R^4$ ,  $-C(=O)NY^1Y^2$ ,  $-C(=O)OR^4$ ,  $-N(R^6)C(=O)R^4$ ,  $-N(R^6)C(=O)NY^1Y^2$ ,

$-N(R^6)C(=O)OR^4$ ,  $-N(R^6)SO_2R^4$ ,  $-NY^1Y^2$ ,  $-OR^4$ ,  $-OC(=O)R^4$ ,  $-OC(=O)NY^1Y^2$ ,  $-S(O)_nR^4$  and

5  $-S(O)_2NY^1Y^2$ ; or

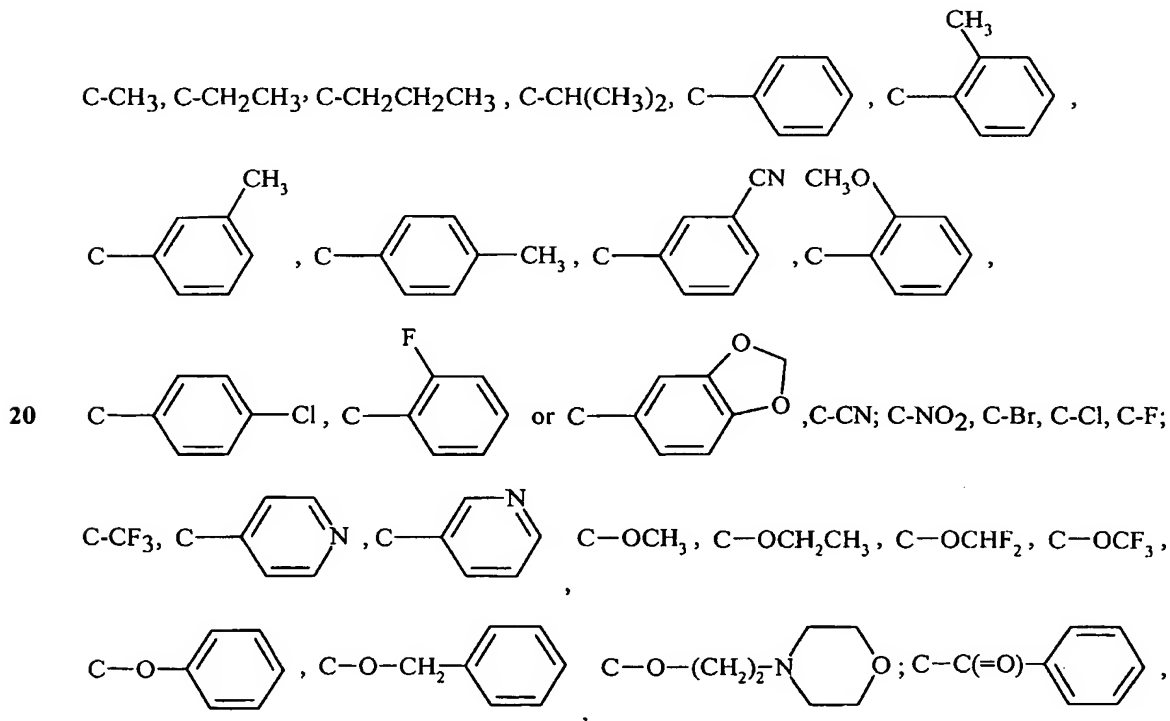
an N-oxide, prodrug, acid bioisostere, pharmaceutically acceptable salt or solvate of such compound;

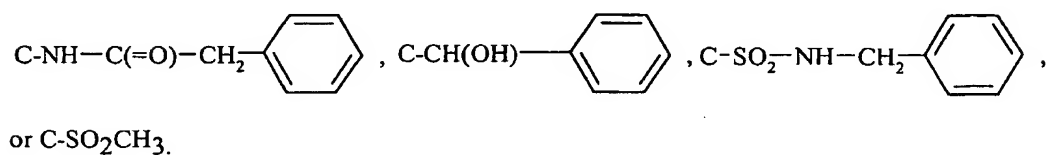
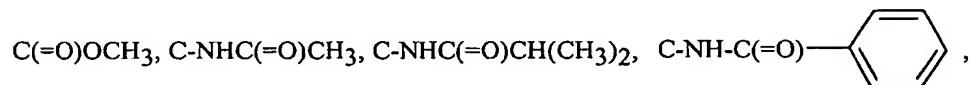
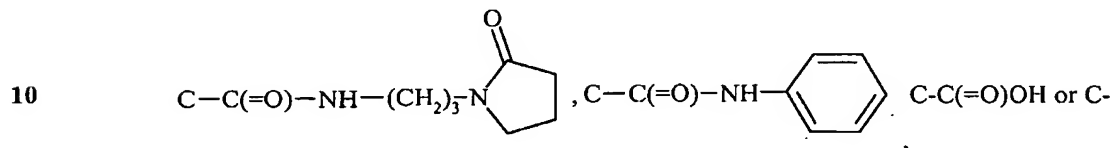
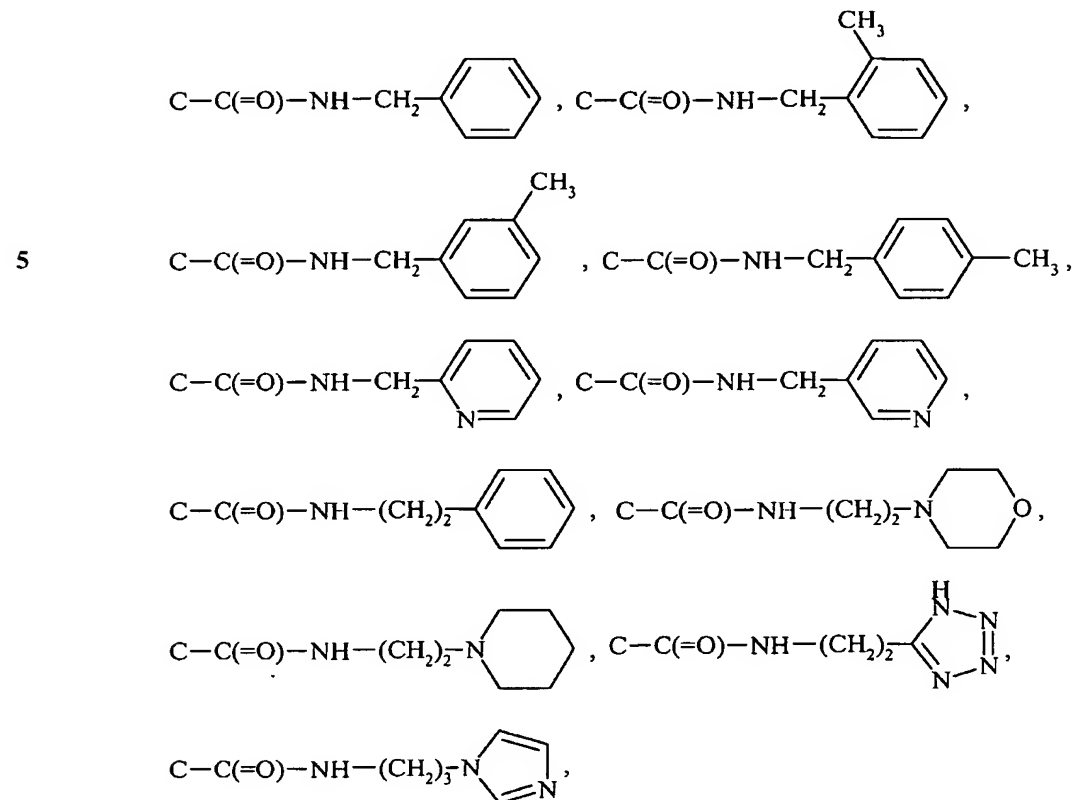
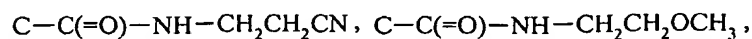
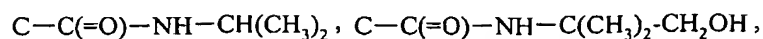
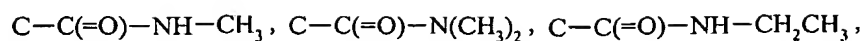
or an N-oxide, prodrug, or acid bioisostere of such salt or solvate.

15. A compound according to claim 14 wherein W is CH; X is CH, Y is CH; and Z is CH or C-  
10 CH<sub>3</sub>.

16. A compound according to claim 14 wherein W represents CH; X represents CH; Z represents  
CH; and Y represents C-C<sub>1-4</sub>alkyl; C-aryl; C-CN; C-NO<sub>2</sub>; C-halo; C-haloalkyl; C-heteroaryl; C-OR<sup>4</sup>;  
C-C(=O)R<sup>4</sup>; C-C(=O)NY<sup>1</sup>Y<sup>2</sup>; C-C(=O)OR<sup>4</sup>; C-NHC(=O)R<sup>4</sup>; C-CH(OH)aryl; C-S(O)<sub>2</sub>NY<sup>1</sup>Y<sup>2</sup>; or  
15 C-S(O)<sub>n</sub>R<sup>4</sup>.

17. A compound according to claim 16 wherein Y represents




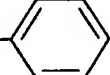


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18. A compound according to claim 14 wherein

W represents CH; X represents C-CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>3</sub>, C-CH(CH<sub>3</sub>)<sub>2</sub>, C-OCH<sub>3</sub>, C-OCH<sub>2</sub>CH<sub>3</sub>,

C-Br or C-Cl; Y represents C-CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>3</sub>, C-OCH<sub>3</sub>, C-Br, C-Cl, C-F, C-

or C-C(=O)-NH-CH<sub>2</sub>-; and Z represents CH.

5 19. A compound according to claim 14 wherein W represents CH; X represents CH; Y represents C-CH<sub>3</sub>; and Z represents C-CH<sub>3</sub>.

20. A compound according to claim 14 wherein W represents CH; X represents CR<sup>2</sup>; and Y represents CR<sup>3</sup>, where R<sup>2</sup> and R<sup>3</sup> form the group -CH<sub>2</sub>-O-CH<sub>2</sub>; and Z represents CH.

10


21. A compound according to claim 14 wherein W represents CH; X represents CR<sup>2</sup>; Y represents CR<sup>3</sup>, where R<sup>2</sup> and R<sup>3</sup> form the group -CH<sub>2</sub>-CH<sub>2</sub>-CH<sub>2</sub>-; and Z represents CH.




22. A compound according to claim 14 wherein R<sup>7</sup> represents hydrogen.



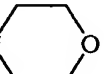
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23. A compound according to claim 14 wherein R<sup>8</sup> represents hydrogen, C<sub>1-4</sub>alkyl, -SR<sup>4</sup>, -NY<sup>1</sup>Y<sup>2</sup> or -OR<sup>5</sup>.

24. A compound according to claim 14 wherein R<sup>8</sup> represents hydrogen, CH<sub>3</sub>, CH<sub>2</sub>CH<sub>3</sub>,

20 CH(CH<sub>3</sub>)<sub>2</sub> or CH(CH<sub>3</sub>)CH<sub>2</sub>CH<sub>3</sub>; -S-CH<sub>3</sub>, -S-CH<sub>2</sub>CH<sub>3</sub> or -S-CH<sub>2</sub>-,



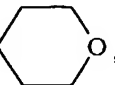
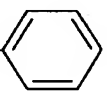

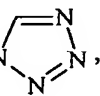
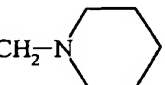
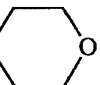

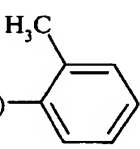
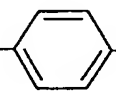



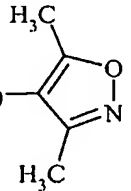

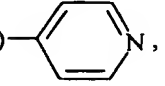
-S-CH<sub>2</sub>-, -S-CH<sub>2</sub>-, -S-CH<sub>2</sub>-CH<sub>2</sub>-,

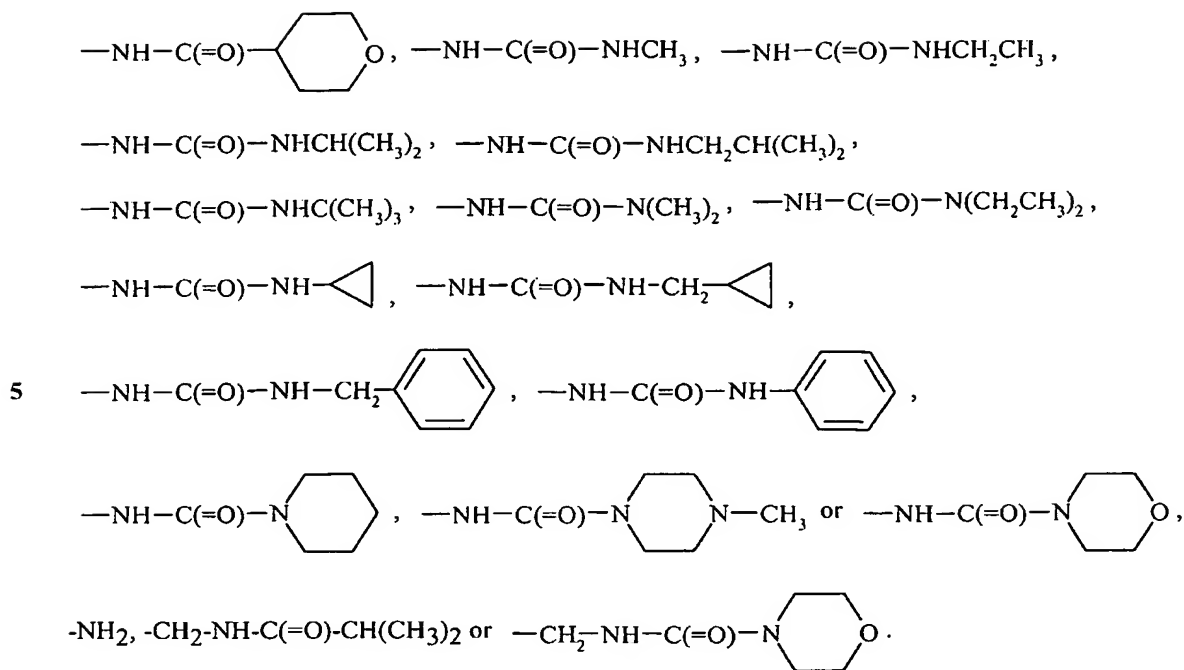
-S-CH<sub>2</sub>- or -S-CH<sub>2</sub>- -N, or -OCH<sub>2</sub>CH<sub>3</sub>.

25. A compound according to claim 14 wherein R<sup>9</sup> represents hydrogen, C<sub>1-7</sub>alkyl, aryl,

25 -C(=O)NY<sup>1</sup>Y<sup>2</sup>, -N(R<sup>6</sup>)C(=O)R<sup>4</sup>, where R<sup>4</sup> is alkyl optionally substituted by aryl, cycloalkyl,

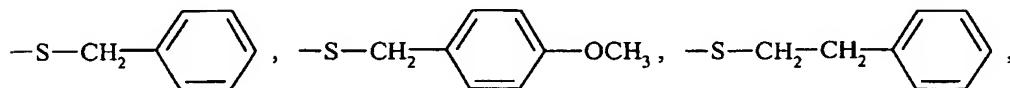
heteroaryl, heterocycloalkyl, or where  $R^4$  is  $NY^1Y^2$  or  $-OR^5$ , or where  $R^4$  is aryl, or where  $R^4$  is cycloalkyl, or where  $R^4$  is heteroaryl, or where  $R^4$  is heterocycloalkyl; or  $R^9$  represents  $-N(R^6)C(=O)NY^1Y^2$ ,  $-NY^1Y^2$ , or alkyl substituted by  $-N(R^6)C(=O)NY^1Y^2$ .

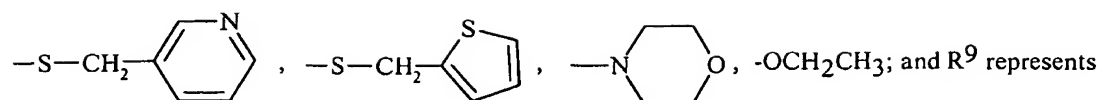
- 5 26. A compound according to claim 14 wherein  $R^9$  represents hydrogen,  $-CH_3$ ,  $-CH_2CH_2CH_3$ ,  $-CH(CH_3)_2$ ,  $-CH_2-CH_2-CH(CH_3)_2$ , phenyl,  $-C(=O)-NH-CH_2CH_3$ ,  $-C(=O)-NH-CH_2CH_2CH_3$ ,  $-C(=O)-NH-CH_2CH(CH_3)_2$ ,  $-C(=O)-NH-CH(CH_3)_2$ ,  $-C(=O)-NH-C(CH_3)_3$ ,  $-C(=O)-NH-C(CH_3)_2CH_2OH$ ,  $-C(=O)-NH-CH_2CH_2OCH_3$ ,  $-C(=O)-N(CH_3)_2$ ,  $-C(=O)-N(CH_2CH_3)_2$ ,
- 10  $-C(=O)-NH-$  ,  $-C(=O)-NH-CH_2-$  ,  $-C(=O)-NH-$  ,  $-NH-C(=O)-CH_3$ ,  $-NH-C(=O)-(CH_2)_2CH_3$ ,  $-NH-C(=O)-CH(CH_3)_2$ ,  $-NH-C(=O)-C(CH_3)_3$ ,  $-NH-C(=O)-CH_2CH(CH_3)_2$ ,  $-NH-C(=O)-CH(CH_3)CH_2CH_3$ ,  $-NH-C(=O)-CH_2C(CH_3)_3$ ,  $-NH-C(=O)-CH_2-$  ,  $-NH-C(=O)-CH_2-$  ,  $-NH-C(=O)-CH_2-N$  ,  $-NH-C(=O)-CH_2-N(CH_3)_2$ ,
- 15  $-NH-C(=O)-CH_2-N$  ,  $-NH-C(=O)-CH_2-N$  ,  $-NH-C(=O)-CH_2OCH_3$  ],  $-NH-C(=O)-$  ,  $-NH-C(=O)-$  , or  $-NH-C(=O)-$  ,  $-NH-C(=O)-$  , or  $-NH-C(=O)-$  ,  $-NH-C(=O)-$  ,  $-NH-C(=O)-$  ,  $-NH-C(=O)-$  ,  $-NH-C(=O)-$  ,



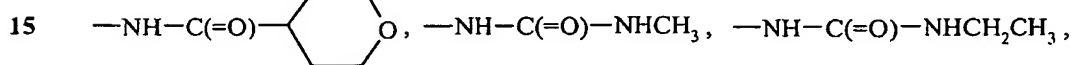
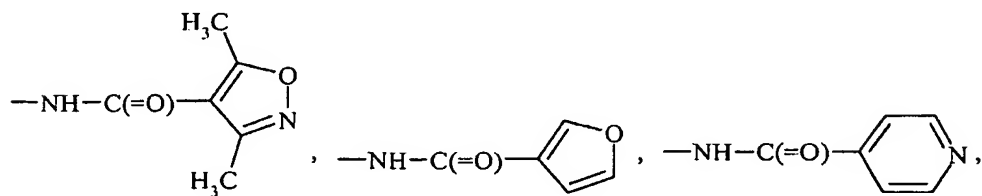
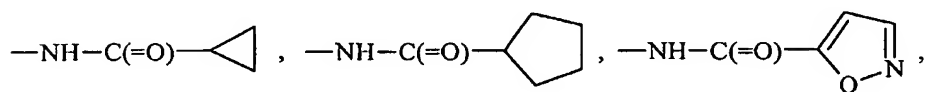
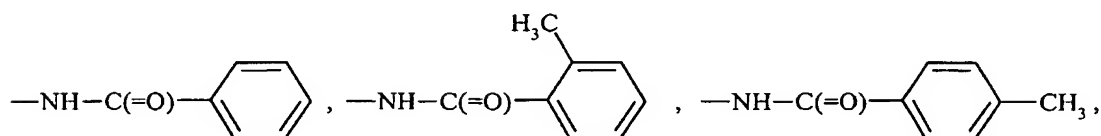
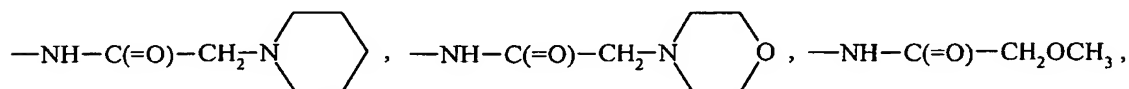
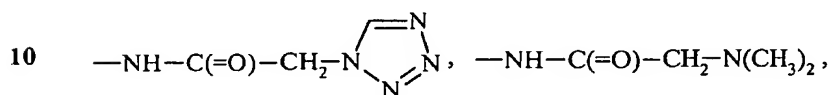
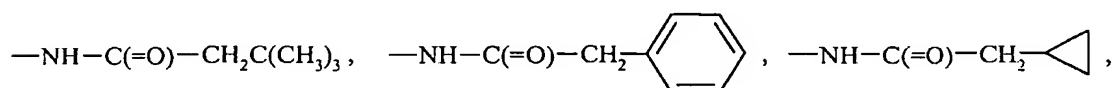
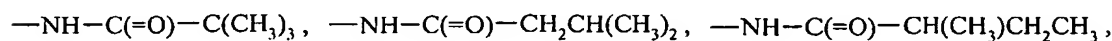
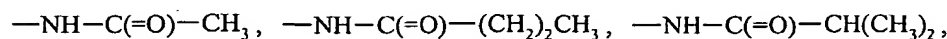
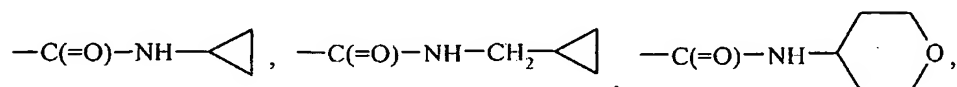
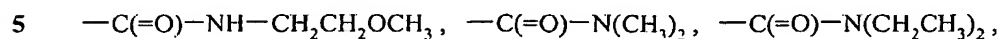
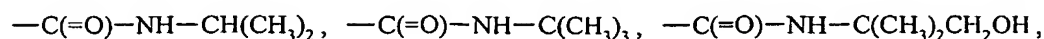
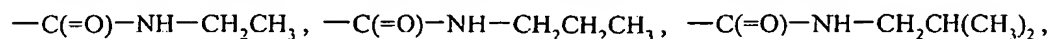
27. A compound according to claim 14 wherein  
 10 W represents CH;  
 X represents CH;  
 Y represents CH;  
 Z represents CH or C-CH<sub>3</sub>;  
 R<sup>7</sup> represents hydrogen;  
 15 R<sup>8</sup> represents hydrogen, C<sub>1-4</sub>alkyl, -SR<sup>4</sup>, -NY<sup>1</sup>Y<sup>2</sup>; and  
 R<sup>9</sup> represents hydrogen, C<sub>1-7</sub>alkyl, aryl, -C(=O)NY<sup>1</sup>Y<sup>2</sup>, -N(R<sup>6</sup>)C(=O)R<sup>4</sup>, particularly -  
 NHC(=O)R<sup>4</sup>, -N(R<sup>6</sup>)C(=O)NY<sup>1</sup>Y<sup>2</sup>, -NY<sup>1</sup>Y<sup>2</sup>, or alkyl substituted by -N(R<sup>6</sup>)C(=O)NY<sup>1</sup>Y<sup>2</sup>.

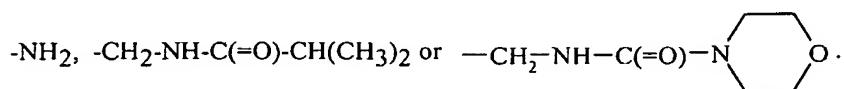
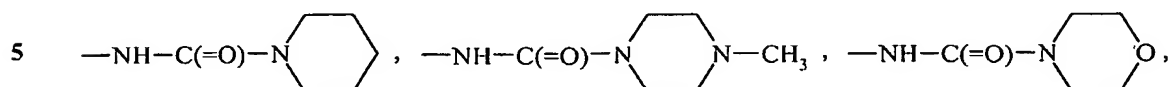
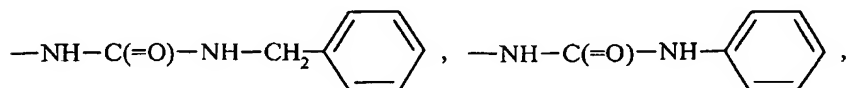
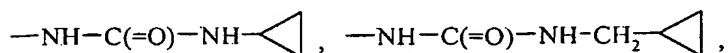
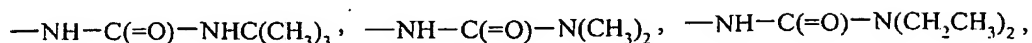
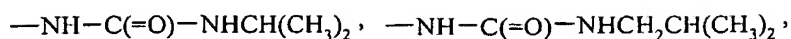
28. A compound according to claim 14 wherein W represents CH; X represents CH; Y represents  
 20 CH; Z represents CH or C-CH<sub>3</sub>; R<sup>7</sup> represents hydrogen; R<sup>8</sup> represents hydrogen, CH<sub>3</sub>, CH<sub>2</sub>CH<sub>3</sub>,  
 CH(CH<sub>3</sub>)<sub>2</sub>, CH(CH<sub>3</sub>)CH<sub>2</sub>CH<sub>3</sub>], -S-CH<sub>3</sub>, -S-CH<sub>2</sub>CH<sub>3</sub> or -S-CH<sub>2</sub>- $\triangle$ ,





hydrogen,  $-\text{CH}_3$ ,  $-\text{CH}_2\text{CH}_2\text{CH}_3$ ,  $-\text{CH}(\text{CH}_3)_2$ ,  $-\text{CH}_2-\text{CH}_2-\text{CH}(\text{CH}_3)_2$ , phenyl,





29. A compound according to claim 14 wherein

W represents CH;

**10** X represents CH;

Z represents CH;

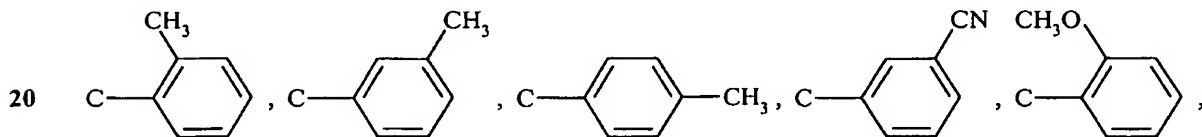
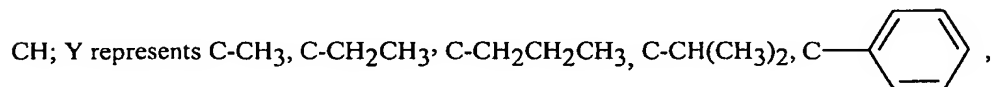
Y represents C-C<sub>1-4</sub>alkyl, C-aryl, C-CN, C-NO<sub>2</sub>, C-halo, C-haloalkyl, C-heteroaryl, C-OR<sup>4</sup>, C-C(=O)R<sup>4</sup>, C-C(=O)NY<sup>1</sup>Y<sup>2</sup>, C-C(=O)OR<sup>4</sup>, or C-CH(OH)aryl;

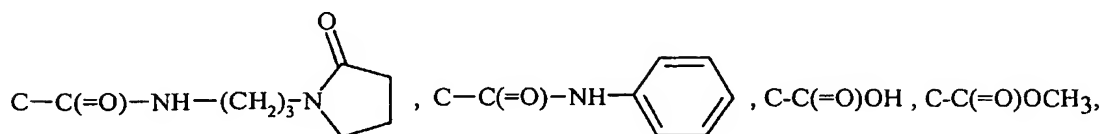
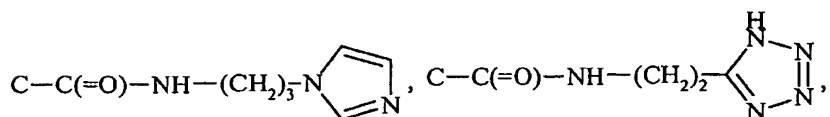
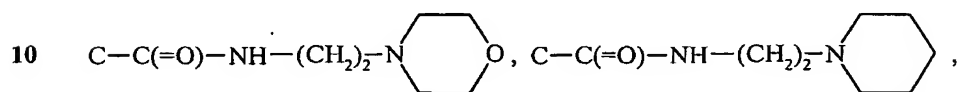
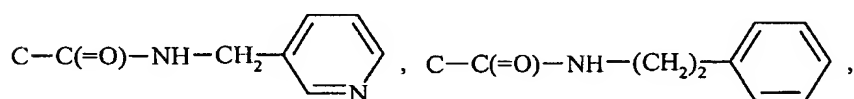
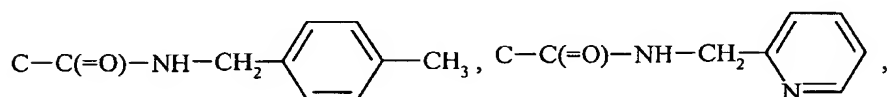
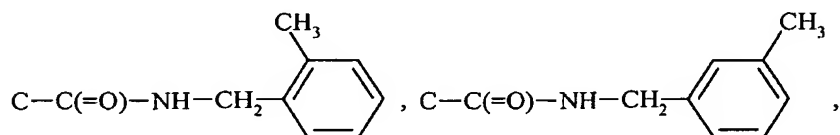
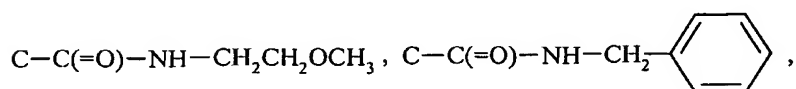
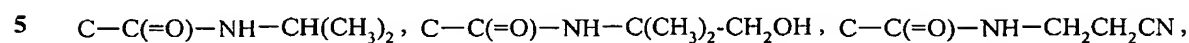
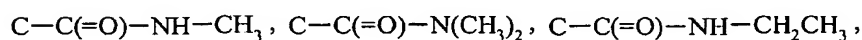
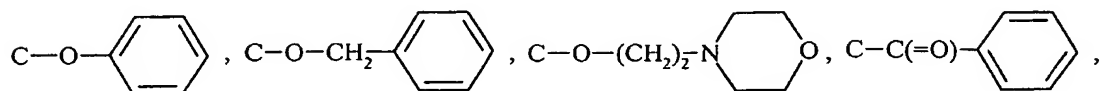
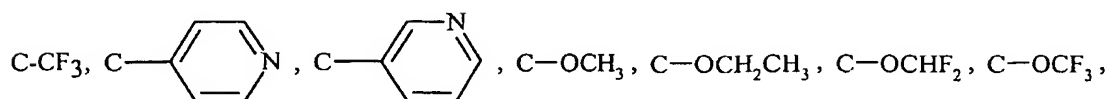
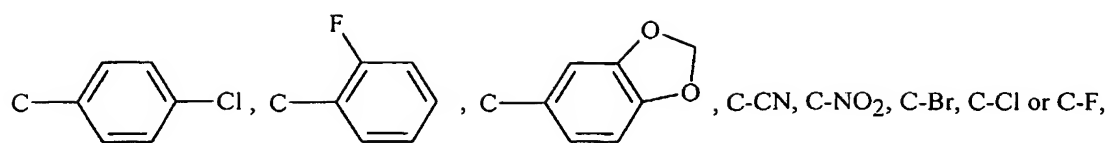
R<sup>8</sup> represents hydrogen, C<sub>1-4</sub>alkyl, -SR<sup>4</sup>, -NY<sup>1</sup>Y<sup>2</sup> or -OR<sup>5</sup>; and

15 R<sup>9</sup> represents hydrogen, C<sub>1-7</sub>alkyl, aryl, -C(=O)NY<sup>1</sup>Y<sup>2</sup>, -N(R<sup>6</sup>)C(=O)R<sup>4</sup>,

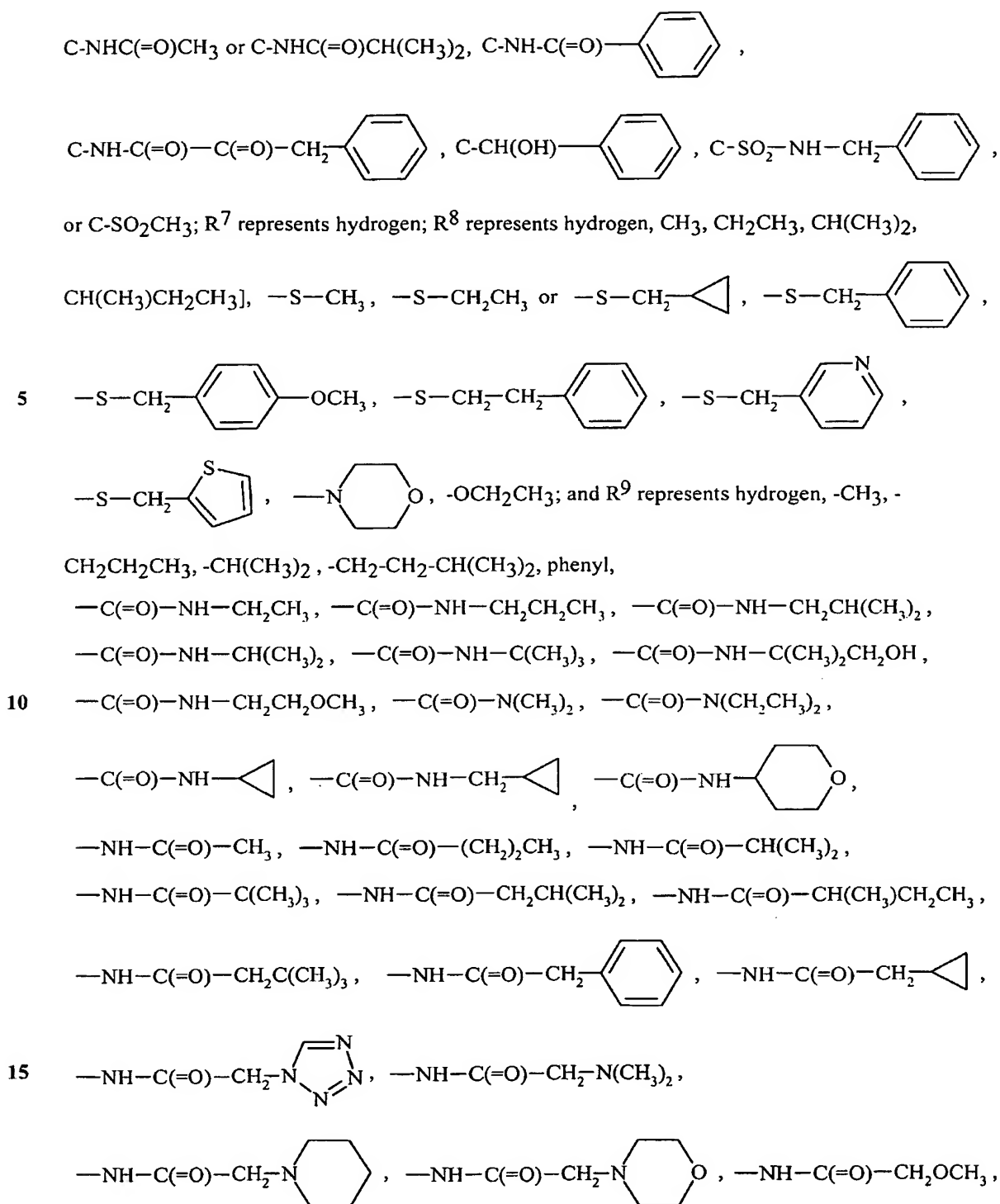
-N(R<sup>6</sup>)C(=O)NY<sup>1</sup>Y<sup>2</sup>, -NY<sup>1</sup>Y<sup>2</sup>, or alkyl substituted by -N(R<sup>6</sup>)C(=O)NY<sup>1</sup>Y<sup>2</sup>.

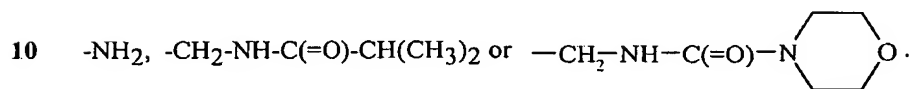
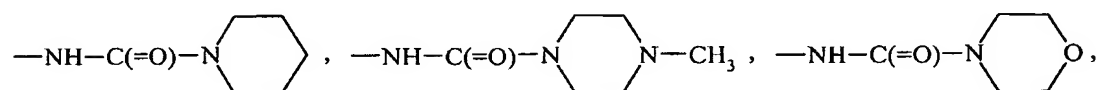
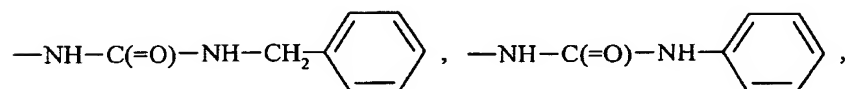
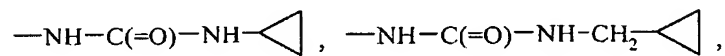
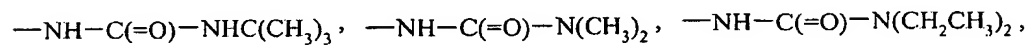
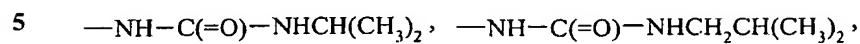
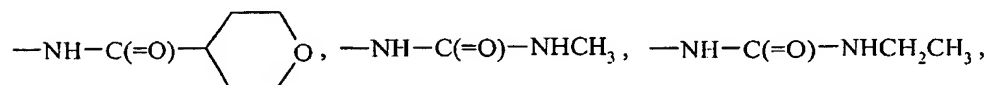
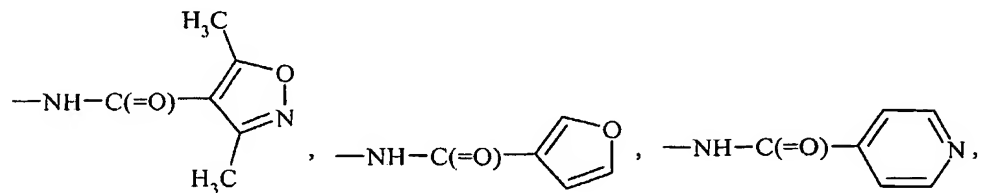
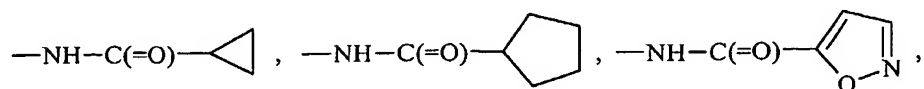
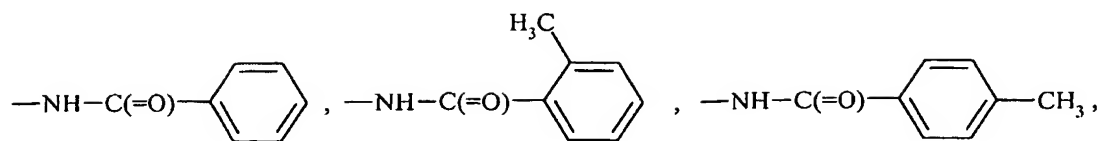
30. A compound according to claim 14 wherein W represents CH; X represents CH; Z represents







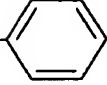


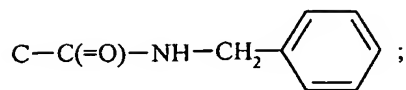


31. A compound according to claim 14 wherein

W represents CH;

X represents C-CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>3</sub>, C-CH(CH<sub>3</sub>)<sub>2</sub>, C-OCH<sub>3</sub>, C-OCH<sub>2</sub>CH<sub>3</sub>, C-Br or C-Cl;

Y represents C-CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>3</sub>, C-OCH<sub>3</sub>, C-Br, C-Cl, C-F, C- or



Z represents CH<sub>3</sub>;

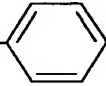
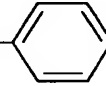
5 R<sup>7</sup> represents hydrogen;

R<sup>8</sup> represents hydrogen, C<sub>1-4</sub>alkyl, -SR<sup>4</sup>, -NY<sup>1</sup>Y<sup>2</sup>, or -OR<sup>5</sup>; and

R<sup>9</sup> represents hydrogen, C<sub>1-7</sub>alkyl, aryl, -C(=O)NY<sup>1</sup>Y<sup>2</sup>, -N(R<sup>6</sup>)C(=O)R<sup>4</sup>,  
-N(R<sup>6</sup>)C(=O)NY<sup>1</sup>Y<sup>2</sup>, -NY<sup>1</sup>Y<sup>2</sup>, or alkyl substituted by -N(R<sup>6</sup>)C(=O)NY<sup>1</sup>Y<sup>2</sup>.


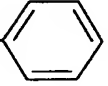
10

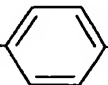
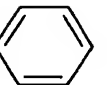

32. A compound according to claim 14 wherein W represents CH<sub>3</sub>; X represents C-CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>3</sub>, C-CH(CH<sub>3</sub>)<sub>2</sub>, C-OCH<sub>3</sub>, C-OCH<sub>2</sub>CH<sub>3</sub>, C-Br or C-Cl; Y represents C-CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>3</sub>,


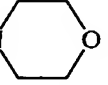
C-OCH<sub>3</sub>, C-Br, C-Cl, C-F, C- or C-C(=O)-NH-CH<sub>2</sub>- ; Z represents CH<sub>3</sub>;

R<sup>7</sup> represents hydrogen; R<sup>8</sup> represents hydrogen, CH<sub>3</sub>, CH<sub>2</sub>CH<sub>3</sub>, CH(CH<sub>3</sub>)<sub>2</sub>, CH(CH<sub>3</sub>)CH<sub>2</sub>CH<sub>3</sub>],

15

-S-CH<sub>3</sub>, -S-CH<sub>2</sub>CH<sub>3</sub> or -S-CH<sub>2</sub>-, -S-CH<sub>2</sub>-,

-S-CH<sub>2</sub>-, -S-CH<sub>2</sub>-CH<sub>2</sub>-, -S-CH<sub>2</sub>-,

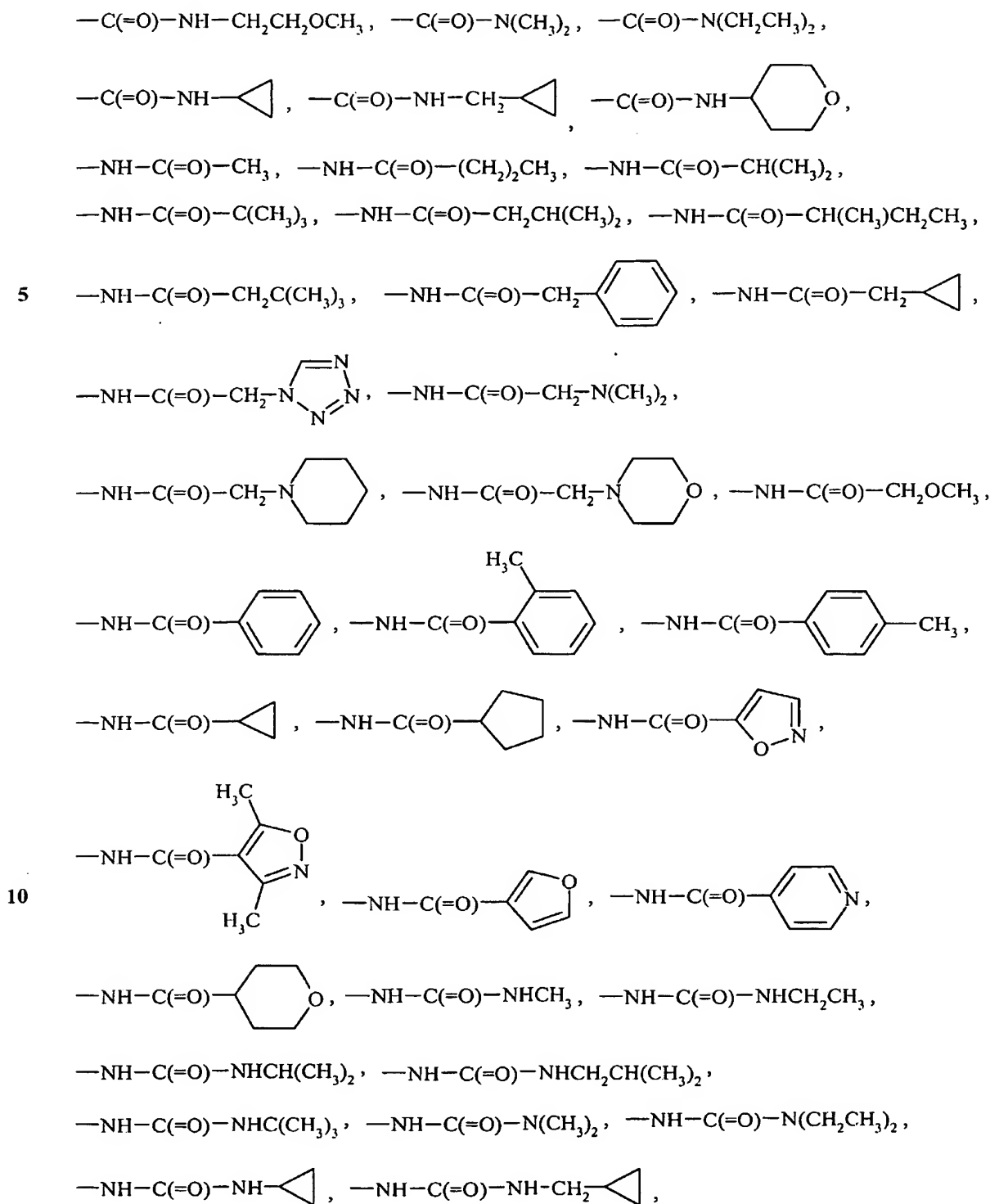
-S-CH<sub>2</sub>-, -N-, -OCH<sub>2</sub>CH<sub>3</sub>; and R<sup>9</sup> represents hydrogen, -CH<sub>3</sub>, -

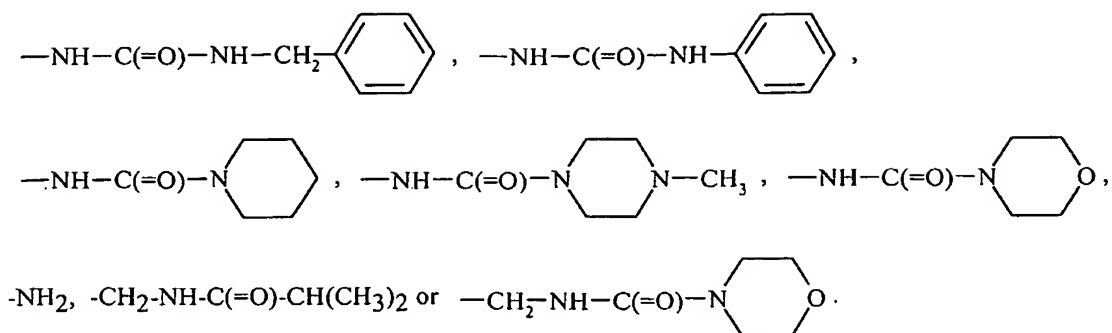
CH<sub>2</sub>CH<sub>2</sub>CH<sub>3</sub>, -CH(CH<sub>3</sub>)<sub>2</sub>, -CH<sub>2</sub>-CH<sub>2</sub>-CH(CH<sub>3</sub>)<sub>2</sub>, phenyl,

-C(=O)-NH-CH<sub>2</sub>CH<sub>3</sub>, -C(=O)-NH-CH<sub>2</sub>CH<sub>2</sub>CH<sub>3</sub>, -C(=O)-NH-CH<sub>2</sub>CH(CH<sub>3</sub>)<sub>2</sub>,

20

-C(=O)-NH-CH(CH<sub>3</sub>)<sub>2</sub>, -C(=O)-NH-C(CH<sub>3</sub>)<sub>3</sub>, -C(=O)-NH-C(CH<sub>3</sub>)<sub>2</sub>CH<sub>2</sub>OH,





5 33. A compound according to claim 14 wherein

W represents CH;

X represents CH;

Y represents C-CH<sub>3</sub>;


Z represents C-CH<sub>3</sub>;

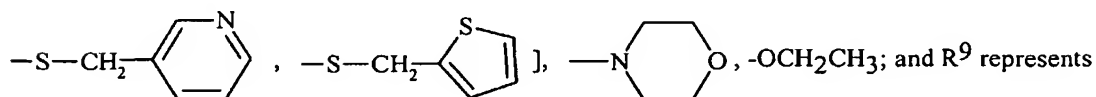
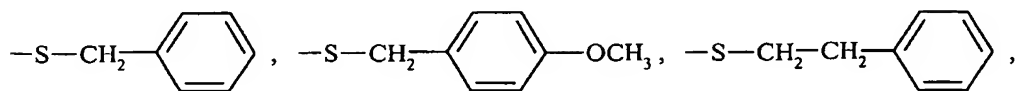
10 R<sup>7</sup> represents hydrogen;

R<sup>8</sup> represents hydrogen, C<sub>1-4</sub>alkyl, -SR<sup>4</sup>, -NY<sup>1</sup>Y<sup>2</sup>, or -OR<sup>5</sup>; and

R<sup>9</sup> represents hydrogen, C<sub>1-7</sub>alkyl, aryl, -C(=O)NY<sup>1</sup>Y<sup>2</sup>; -N(R<sup>6</sup>)C(=O)R<sup>4</sup>,  
 -N(R<sup>6</sup>)C(=O)NY<sup>1</sup>Y<sup>2</sup>, -NY<sup>1</sup>Y<sup>2</sup>, or alkyl substituted by -N(R<sup>6</sup>)C(=O)NY<sup>1</sup>Y<sup>2</sup>.

15 34. A compound according to claim 14 wherein W represents CH; X represents CH; Y represents C-CH<sub>3</sub>; Z represents C-CH<sub>3</sub>; R<sup>7</sup> represents hydrogen; R<sup>8</sup> represents hydrogen, CH<sub>3</sub>,

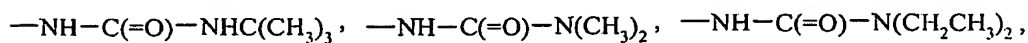
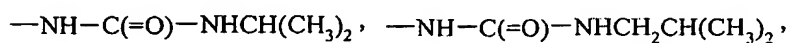
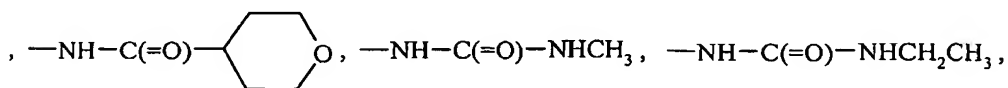
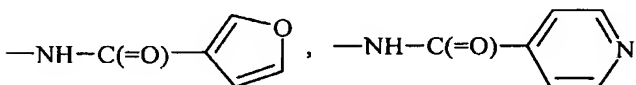
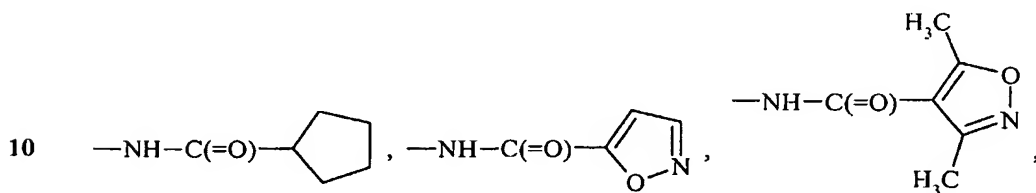
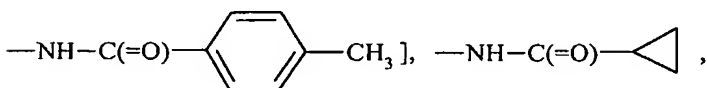
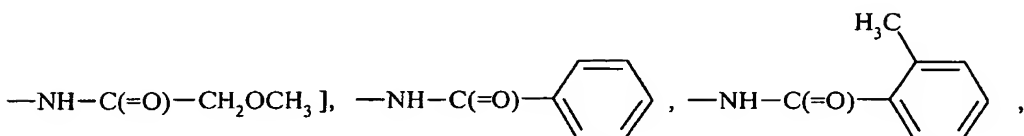
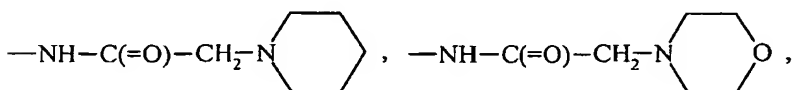
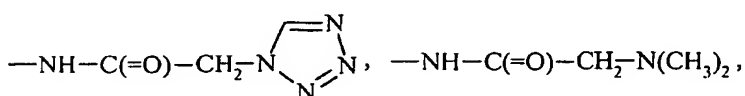
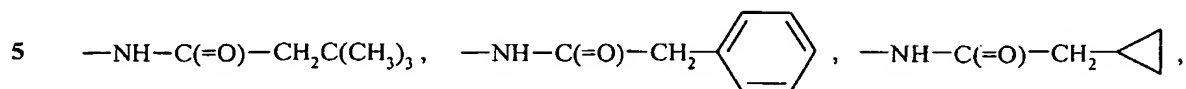
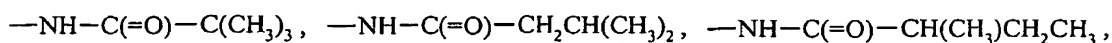
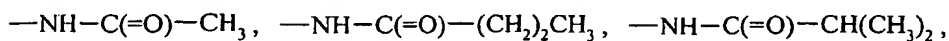
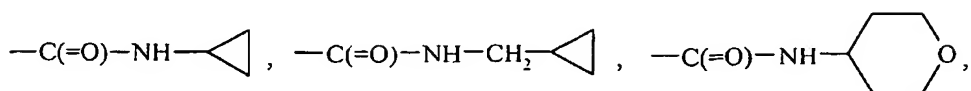
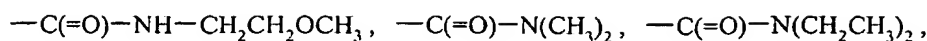
CH<sub>2</sub>CH<sub>3</sub>, CH(CH<sub>3</sub>)<sub>2</sub>, CH(CH<sub>3</sub>)CH<sub>2</sub>CH<sub>3</sub>, -S-CH<sub>3</sub>, -S-CH<sub>2</sub>CH<sub>3</sub> or -S-CH<sub>2</sub>- ,

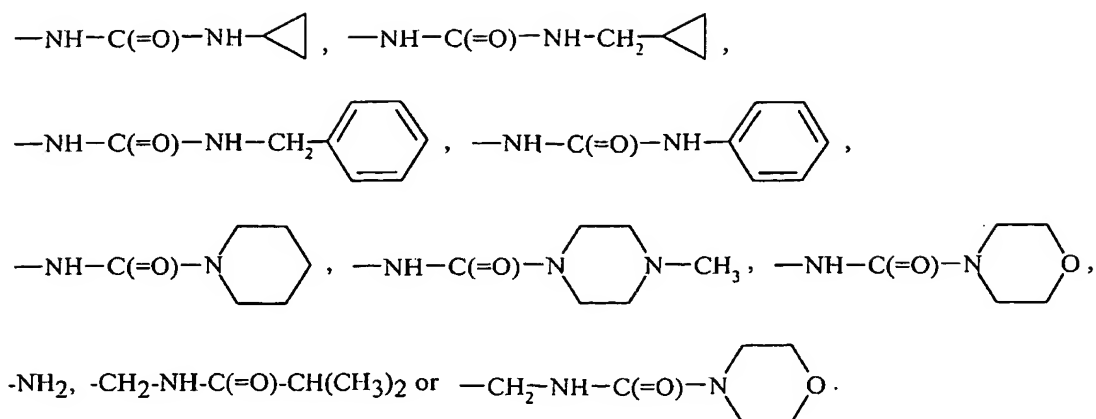


20 hydrogen, -CH<sub>3</sub>, -CH<sub>2</sub>CH<sub>2</sub>CH<sub>3</sub>, -CH(CH<sub>3</sub>)<sub>2</sub>, -CH<sub>2</sub>-CH<sub>2</sub>-CH(CH<sub>3</sub>)<sub>2</sub>,

phenyl, -C(=O)-NH-CH<sub>2</sub>CH<sub>2</sub>CH<sub>3</sub>, -C(=O)-NH-CH<sub>2</sub>CH(CH<sub>3</sub>)<sub>2</sub>,

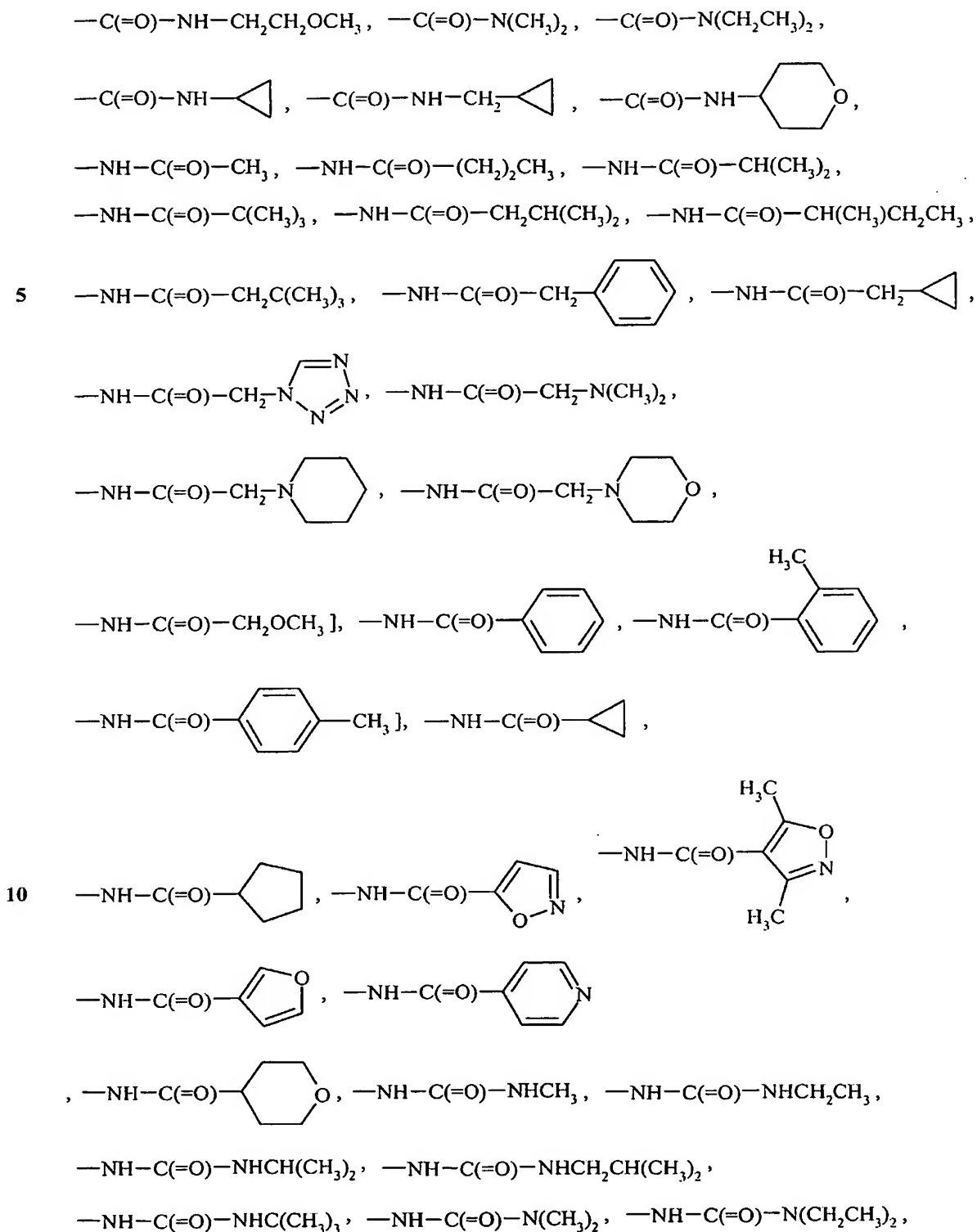
-C(=O)-NH-CH(CH<sub>3</sub>)<sub>2</sub>, -C(=O)-NH-C(CH<sub>3</sub>)<sub>3</sub>, -C(=O)-NH-C(CH<sub>3</sub>)<sub>2</sub>CH<sub>2</sub>OH,



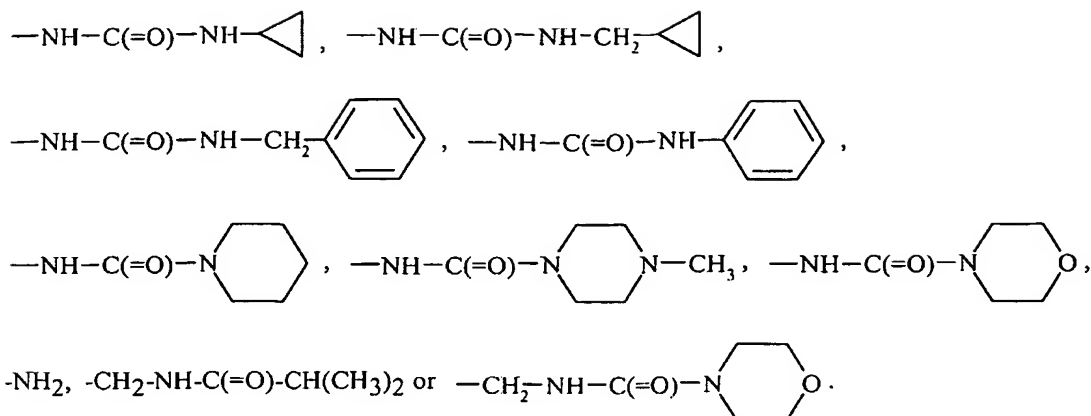


- 5 35. A compound according to claim 14 wherein  
 W represents CH;  
 X represents  $\text{CR}^2$  and Y represents  $\text{CR}^3$  where  $\text{R}^2$  and  $\text{R}^3$  form the group  $-\text{CH}_2-\text{O}-\text{CH}_2-$ ;  
 Z represents CH;  
 $\text{R}^7$  represents hydrogen;  
 10  $\text{R}^8$  represents hydrogen,  $\text{C}_{1-4}$ alkyl ,  $-\text{SR}^4$  ,  $-\text{NY}^1\text{Y}^2$  , or  $-\text{OR}^5$ ; and  
 $\text{R}^9$  represents hydrogen,  $\text{C}_{1-7}$ alkyl , aryl ,  $-\text{C}(=\text{O})\text{NY}^1\text{Y}^2$  ;  $-\text{N}(\text{R}^6)\text{C}(=\text{O})\text{R}^4$  ,  
 $-\text{N}(\text{R}^6)\text{C}(=\text{O})\text{NY}^1\text{Y}^2$  ,  $-\text{NY}^1\text{Y}^2$  , or alkyl substituted by  $-\text{N}(\text{R}^6)\text{C}(=\text{O})\text{NY}^1\text{Y}^2$  .

- 15 36. A compound according to claim 14 wherein W represents CH; X represents  $\text{CR}^2$  and Y  
 represents  $\text{CR}^3$  where  $\text{R}^2$  and  $\text{R}^3$  form the group  $-\text{CH}_2-\text{O}-\text{CH}_2-$ ; Z represents CH;  $\text{R}^7$  represents  
 hydrogen;  $\text{R}^8$  represents hydrogen,  $\text{CH}_3$ ,  $\text{CH}_2\text{CH}_3$ ,  $\text{CH}(\text{CH}_3)_2$ ,  $\text{CH}(\text{CH}_3)\text{CH}_2\text{CH}_3$ ,  $-\text{S}-\text{CH}_3$  ,  
 $-\text{S}-\text{CH}_2\text{CH}_3$  or  $-\text{S}-\text{CH}_2-\triangle$  ,  $-\text{S}-\text{CH}_2-\text{C}_6\text{H}_5$  ,  $-\text{S}-\text{CH}_2-\text{C}_6\text{H}_4-\text{OCH}_3$  ,  
 $-\text{S}-\text{CH}_2-\text{CH}_2-\text{C}_6\text{H}_5$  ,  $-\text{S}-\text{CH}_2-\text{C}_5\text{H}_4\text{N}$  ,  $-\text{S}-\text{CH}_2-\text{C}_4\text{H}_3\text{S}$  ],  $-\text{N}-\text{C}_6\text{H}_{10}-\text{O}$  , -  
 $\text{OCH}_2\text{CH}_3$ ; and  $\text{R}^9$  represents hydrogen,  $-\text{CH}_3$ ,  $-\text{CH}_2\text{CH}_2\text{CH}_3$ ,  $-\text{CH}(\text{CH}_3)_2$  ,  $-\text{CH}_2-\text{CH}_2-\text{CH}(\text{CH}_3)_2$  ,  
 20 phenyl ,  $-\text{C}(=\text{O})-\text{NH}-\text{CH}_2\text{CH}_2\text{CH}_3$  ,  $-\text{C}(=\text{O})-\text{NH}-\text{CH}_2\text{CH}(\text{CH}_3)_2$  ,  
 $-\text{C}(=\text{O})-\text{NH}-\text{CH}(\text{CH}_3)_2$  ,  $-\text{C}(=\text{O})-\text{NH}-\text{C}(\text{CH}_3)_3$  ,  $-\text{C}(=\text{O})-\text{NH}-\text{C}(\text{CH}_3)_2\text{CH}_2\text{OH}$  ,

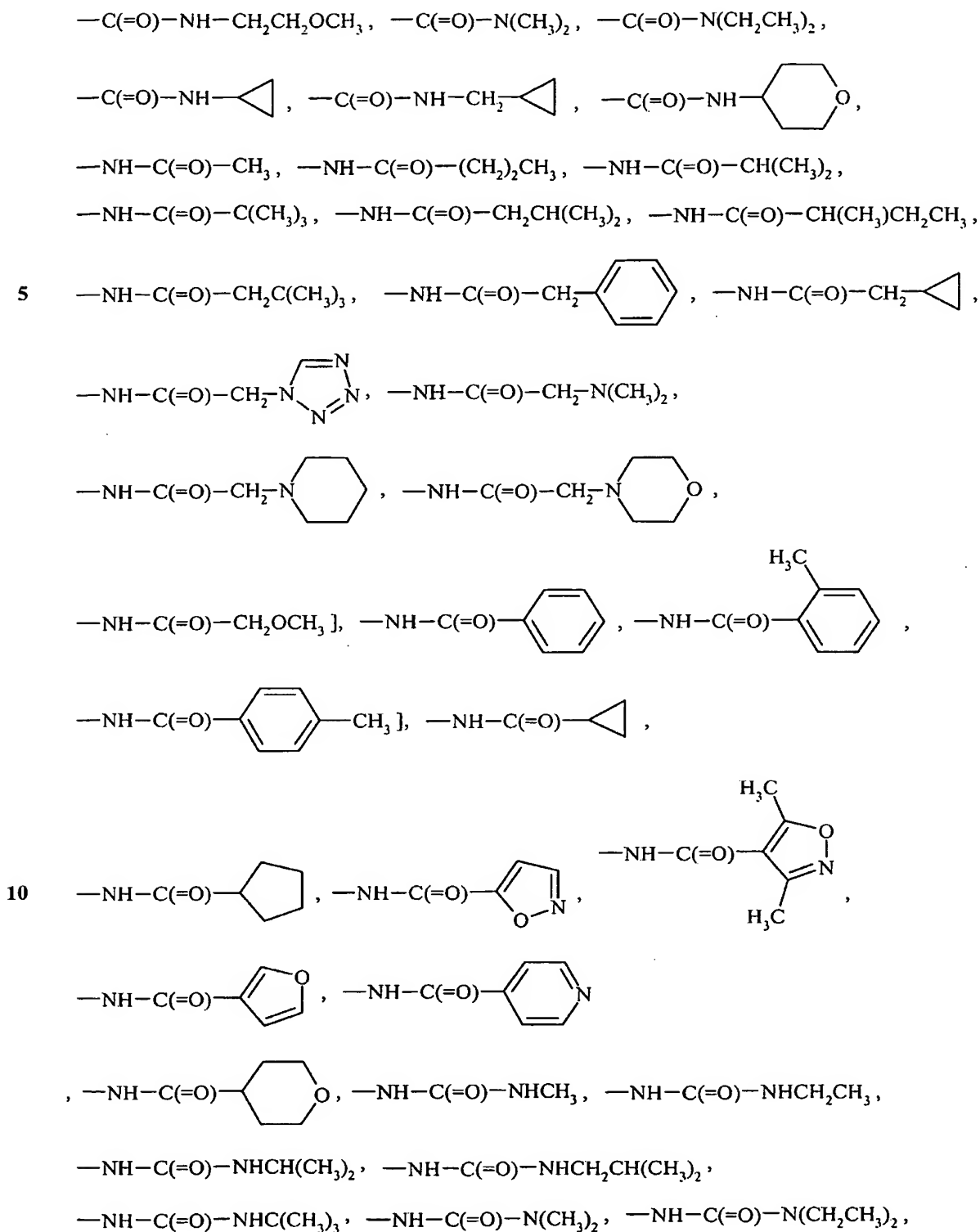


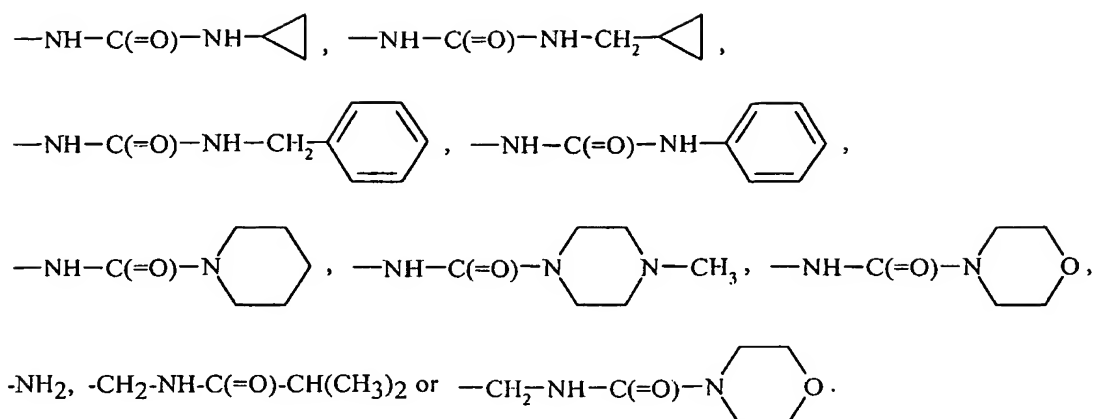




- 5 37. A compound according to claim 14 wherein  
 W represents CH;  
 X represents  $\text{CR}^2$  and Y represents  $\text{CR}^3$  where  $\text{R}^2$  and  $\text{R}^3$  form the group  $-\text{CH}_2-\text{CH}_2-\text{CH}_2-$ ;  
 Z represents CH;  
 $\text{R}^7$  represents hydrogen;  
 10  $\text{R}^8$  represents hydrogen,  $\text{C}_{1-4}$ alkyl ,  $-\text{SR}^4$  ,  $-\text{NY}^1\text{Y}^2$  , or  $-\text{OR}^5$ ; and  
 $\text{R}^9$  represents hydrogen,  $\text{C}_{1-7}$ alkyl, aryl,  $-\text{C}(=\text{O})\text{NY}^1\text{Y}^2$  ,  $-\text{N}(\text{R}^6)\text{C}(=\text{O})\text{R}^4$  ,  
 $-\text{N}(\text{R}^6)\text{C}(=\text{O})\text{NY}^1\text{Y}^2$  ,  $-\text{NY}^1\text{Y}^2$  or alkyl substituted by  $-\text{N}(\text{R}^6)\text{C}(=\text{O})\text{NY}^1\text{Y}^2$  .

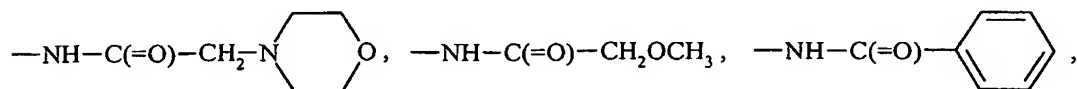
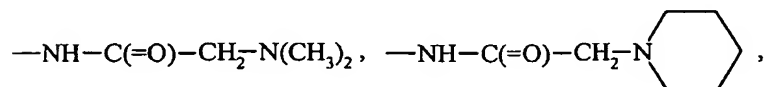
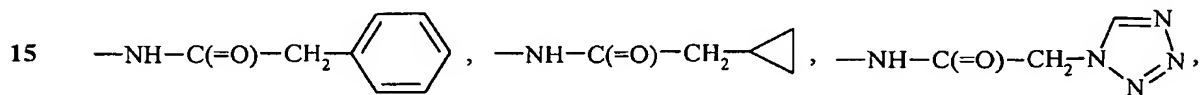
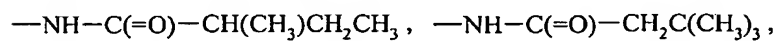
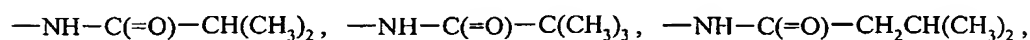
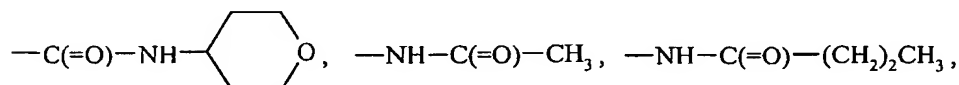
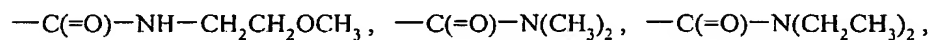
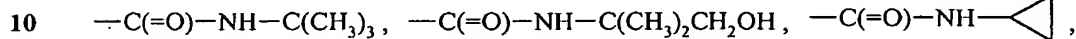
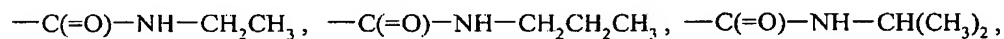
38. A compound according to claim 14 wherein W represents CH; X represents  $\text{CR}^2$  and Y  
 15 represents  $\text{CR}^3$  where  $\text{R}^2$  and  $\text{R}^3$  form the group  $-\text{CH}_2-\text{CH}_2-\text{CH}_2-$  ; Z represents CH;  $\text{R}^7$  represents  
 hydrogen;  $\text{R}^8$  represents hydrogen,  $\text{CH}_3$ ,  $\text{CH}_2\text{CH}_3$ ,  $\text{CH}(\text{CH}_3)_2$ ,  $\text{CH}(\text{CH}_3)\text{CH}_2\text{CH}_3$ ,  $-\text{S}-\text{CH}_3$  ,  
 $-\text{S}-\text{CH}_2\text{CH}_3$  or  $-\text{S}-\text{CH}_2-\triangle$  ,  $-\text{S}-\text{CH}_2-\text{C}_6\text{H}_5$  ,  $-\text{S}-\text{CH}_2-\text{C}_6\text{H}_4-\text{OCH}_3$  ,  
 $-\text{S}-\text{CH}_2-\text{CH}_2-\text{C}_6\text{H}_5$  ,  $-\text{S}-\text{CH}_2-\text{C}_5\text{H}_4\text{N}$  ,  $-\text{S}-\text{CH}_2-\text{C}_4\text{H}_3\text{S}$  ,  $-\text{N}-\text{C}_6\text{H}_9\text{O}$  , -  
 $\text{OCH}_2\text{CH}_3$ ; and  $\text{R}^9$  represents hydrogen,  $-\text{CH}_3$ ,  $-\text{CH}_2\text{CH}_2\text{CH}_3$ ,  $-\text{CH}(\text{CH}_3)_2$  ,  $-\text{CH}_2-\text{CH}_2-\text{CH}(\text{CH}_3)_2$  ,  
 20 phenyl,  $-\text{C}(=\text{O})-\text{NH}-\text{CH}_2\text{CH}_2\text{CH}_3$  ,  $-\text{C}(=\text{O})-\text{NH}-\text{CH}_2\text{CH}(\text{CH}_3)_2$  ,  
 $-\text{C}(=\text{O})-\text{NH}-\text{CH}(\text{CH}_3)_2$  ,  $-\text{C}(=\text{O})-\text{NH}-\text{C}(\text{CH}_3)_3$  ,  $-\text{C}(=\text{O})-\text{NH}-\text{C}(\text{CH}_3)_2\text{CH}_2\text{OH}$  ,



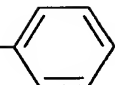
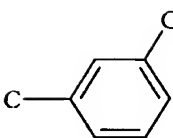


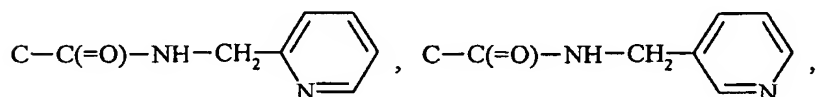
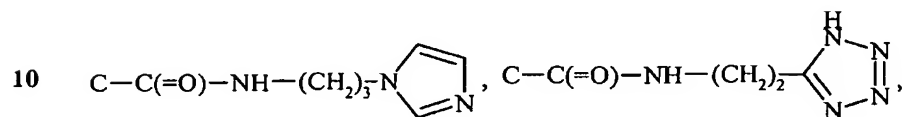
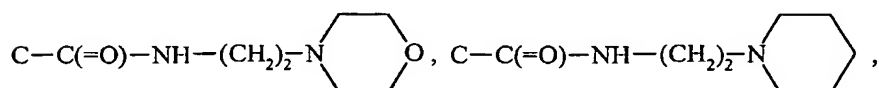
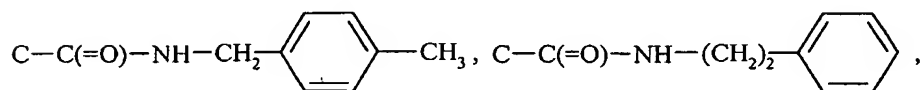
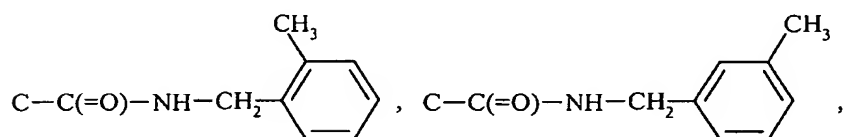
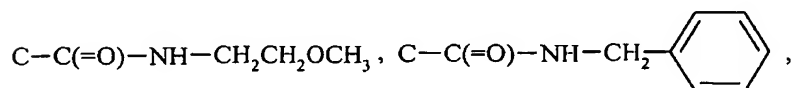
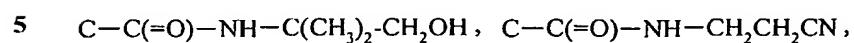
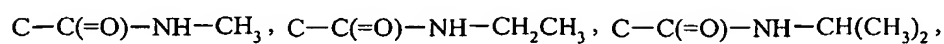
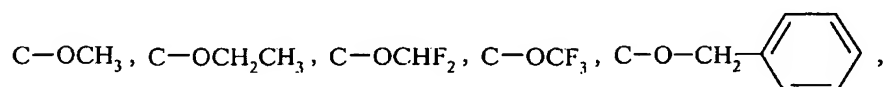
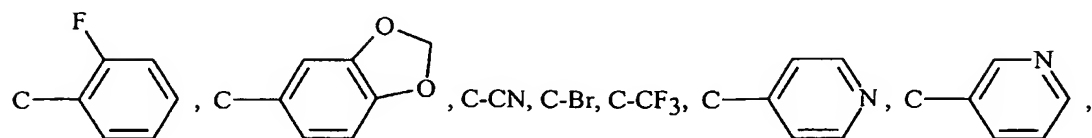
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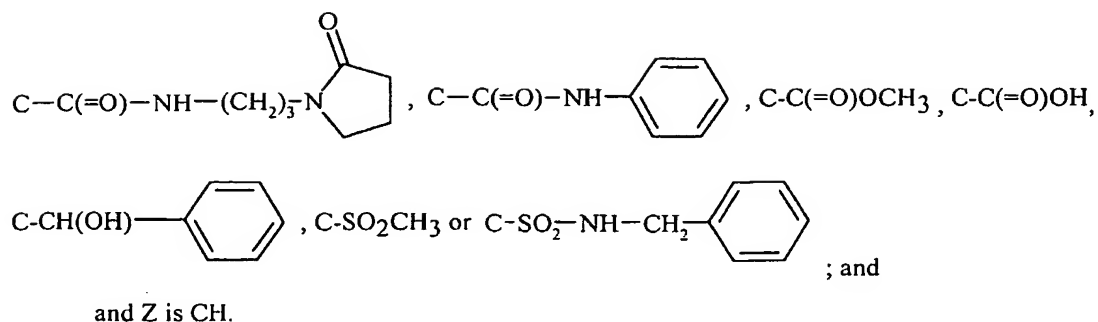
39. A compound according to claim 14 wherein

 $\text{R}^8$  is hydrogen or  $-\text{CH}_3$  ; and $\text{R}^9$  is  $-\text{CH}_2-\text{CH}_2-\text{CH}(\text{CH}_3)_2$ ,

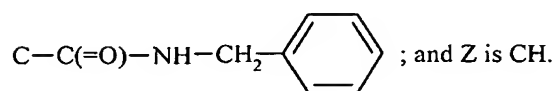
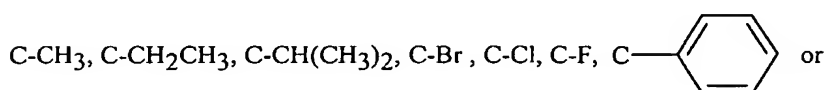
- $\text{—NH—C(=O)—C}_6\text{H}_4\text{CH}_3$ ,  $\text{—NH—C(=O)—C}_6\text{H}_4\text{CH}_3$ ,  $\text{—NH—C(=O)—C}_3\text{H}_5$ ,  
 $\text{—NH—C(=O)—C}_5\text{H}_9$ ,  $\text{—NH—C(=O)—C}_4\text{H}_3\text{NO}$ ,  $\text{—NH—C(=O)—C}_5\text{H}_2\text{N}_2\text{O}$ ,  
 $\text{—NH—C(=O)—C}_6\text{H}_4\text{N}$ ,  $\text{—NH—C(=O)—C}_4\text{H}_3\text{O}$ ,  $\text{—NH—C(=O)—NHCH}_3$ ,  
 $\text{—NH—C(=O)—NHCH}_2\text{CH}_3$ ,  $\text{—NH—C(=O)—NHCH(CH}_3)_2$ ,  $\text{—NH—C(=O)—NHC(CH}_3)_3$ ,  
 5  $\text{—NH—C(=O)—N(CH}_3)_2$ ,  $\text{—NH—C(=O)—N(CH}_2\text{CH}_3)_2$ ,  $\text{—NH—C(=O)—NH—C}_3\text{H}_5$ ,  
 $\text{—NH—C(=O)—NH—CH}_2\text{—C}_3\text{H}_5$ ,  $\text{—NH—C(=O)—NH—CH}_2\text{—C}_6\text{H}_5$ ,  
 $\text{—NH—C(=O)—NH—C}_6\text{H}_5$ ,  $\text{—NH—C(=O)—N—C}_6\text{H}_{11}$ ,  
 $\text{—NH—C(=O)—N—C}_4\text{H}_8\text{N—CH}_3$ ,  $\text{—NH—C(=O)—N—C}_4\text{H}_8\text{O}$ ,  $\text{—CH}_2\text{—NH—C(=O)—CH(CH}_3)_2$  or  
 $\text{—CH}_2\text{—NH—C(=O)—N—C}_4\text{H}_8\text{O}$ .  
 10 40. A compound according to claim 14 wherein  $\text{R}^9$  represents hydrogen and  $\text{R}^8$  represents  
 $\text{—CH(CH}_3)_2$ ,  $\text{—S—CH}_3$ ,  $\text{—S—CH}_2\text{CH}_3$  or  $\text{—S—CH}_2\text{—C}_3\text{H}_5$ .  
 41. A compound according to claim 14 wherein  
 W is  $\text{CH}_2$ ;  
 15 X is  $\text{CH}_2$ ;

Y is CH, C-CH<sub>2</sub>CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>2</sub>CH<sub>3</sub>, C-, C-,





- 5 42. A compound according to claim 14 wherein W is CH; X is C-CH<sub>3</sub> or C-CH<sub>2</sub>CH<sub>3</sub>; Y is



43. A compound according to claim 14 wherein W is CH; X is C-OCH<sub>3</sub>; Y is CH, C-CH<sub>3</sub>,  
 10 C-CH<sub>2</sub>CH<sub>3</sub>, C-Cl or C-OCH<sub>3</sub>; and Z is CH.

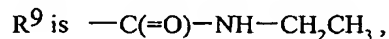
44. A compound according to claim 14 wherein W is CH; X is C-OCH<sub>2</sub>CH<sub>3</sub>; Y is C-F; and  
 Z is CH.

- 15 45. A compound according to claim 14 wherein W represents CH; X represents CR<sup>2</sup> and Y  
 represents CR<sup>3</sup> where R<sup>2</sup> and R<sup>3</sup> atoms form the group -CH<sub>2</sub>-CH<sub>2</sub>-CH<sub>2</sub>-; and Z represents CH.

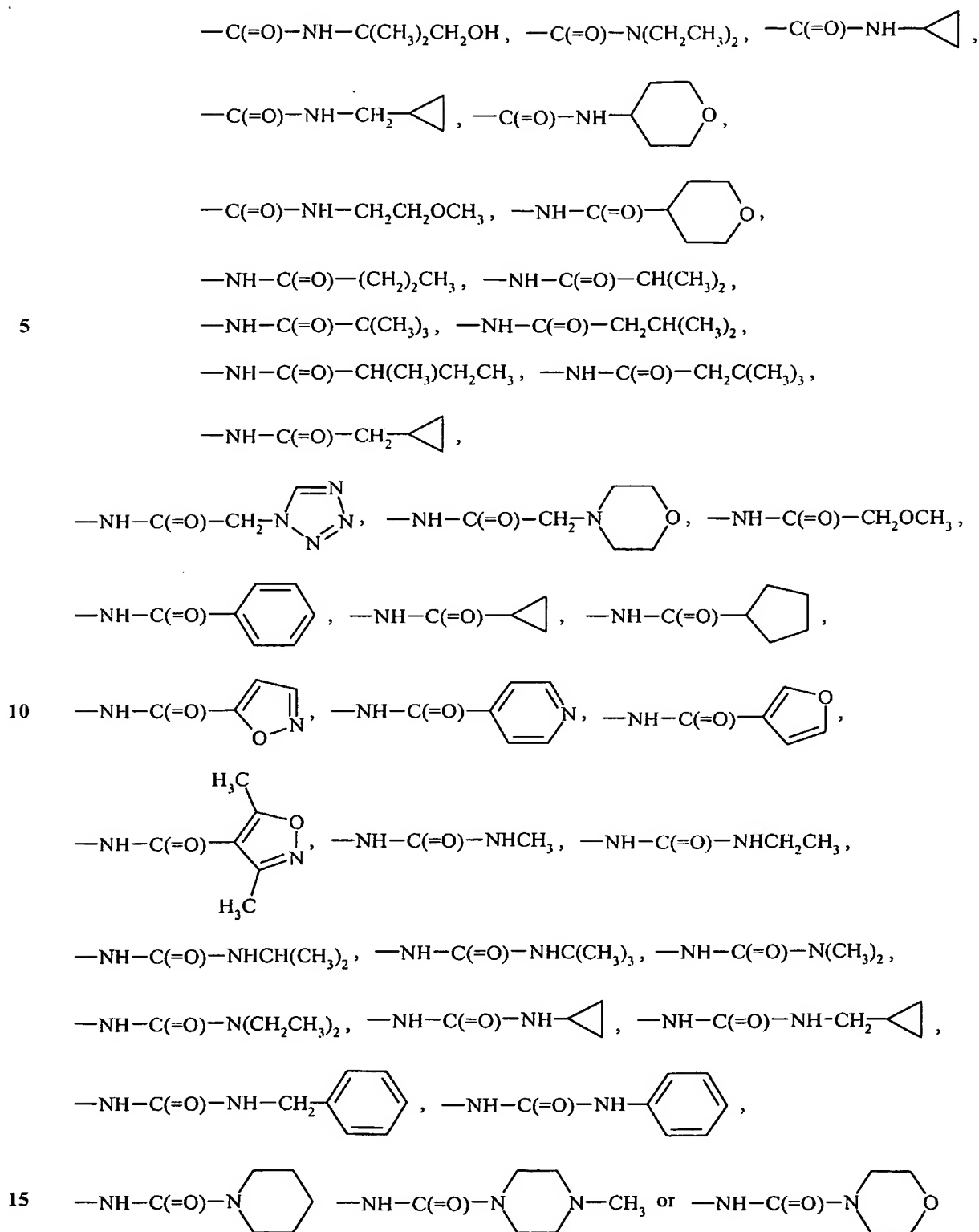
46. A compound according to claim 14 wherein W represents CH; X represents CR<sup>2</sup> and Y  
 represents CR<sup>3</sup> where R<sup>2</sup> and R<sup>3</sup> form the group -CH<sub>2</sub>-O-CH<sub>2</sub>-; and Z represents CH.

20


47. A compound according to claim 14 wherein R<sup>8</sup> is hydrogen or -CH<sub>3</sub>; and

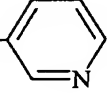


48.  $-\text{C}(=\text{O})-\text{NH}-\text{CH}_2\text{CH}_2\text{CH}_3$ ,  $-\text{C}(=\text{O})-\text{NH}-\text{CH}(\text{CH}_3)_2$ ,  
 $-\text{C}(=\text{O})-\text{NH}-\text{CH}_2\text{CH}(\text{CH}_3)_2$ ,  $-\text{C}(=\text{O})-\text{NH}-\text{C}(\text{CH}_3)_3$ ,



48. W is CH; X is CH; Y is

C-OCH<sub>3</sub>, C-OCH<sub>2</sub>CH<sub>3</sub>, C-OCHF<sub>2</sub>, C-CF<sub>3</sub>, C-C(=O)-NH-CH<sub>2</sub>- or

C-C(=O)-NH-CH<sub>2</sub>- and Z is CH.

5

49. A compound according to claim 14 wherein W is CH; X is C-CH<sub>3</sub> or C-CH<sub>2</sub>CH<sub>3</sub>; Y is C-CH<sub>3</sub> or C-CH<sub>2</sub>CH<sub>3</sub>, C-Cl or C-F; and Z is CH.

10

50. A compound according to claim 14 wherein W is CH; X is C-OCH<sub>3</sub>; Y is C-CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>3</sub>, C-Cl, C-F, or C-OCH<sub>3</sub>; and Z is CH.

51. A compound according to claim 14 wherein W is CH; X is C-OCH<sub>2</sub>CH<sub>3</sub>; Y is C-Cl or C-F; and Z is CH.

15

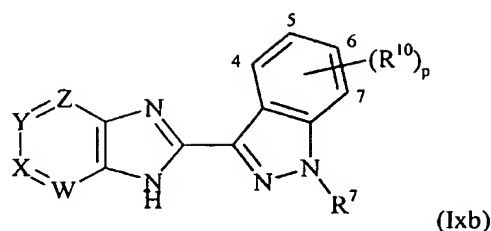
52. A compound according to claim 14 wherein W represents CH; X represents CR<sup>2</sup> and Y represents CR<sup>3</sup> where R<sup>2</sup> and R<sup>3</sup> form the group -CH<sub>2</sub>-CH<sub>2</sub>-CH<sub>2</sub>-; and Z represents CH.

20

53. A compound according to claim 14 wherein W represents CH; X represents CR<sup>2</sup> and Y represents CR<sup>3</sup> where R<sup>2</sup> and R<sup>3</sup> form the group -CH<sub>2</sub>-O-CH<sub>2</sub>-; and Z represents CH.

54. A compound according to claim 3 of the formula (Ixb)





wherein

$R^7$  is hydrogen or alkyl;

$R^{10}$  is carboxy, cyano, halo, haloalkyl, hydroxy, nitro,  $R^4$ ,  $-C(=O)R^4$ ,  $-C(=O)NY^1Y^2$ ,  $-C(=O)OR^4$ ,

5  $-N(R^6)C(=O)R^4$ ,  $-N(R^6)C(=O)NY^1Y^2$ ,  $-N(R^6)C(=O)OR^4$ ,  $-N(R^6)SO_2R^4$ ,  $-N(R^6)SO_2NY^1Y^2$ ,  
 $-NY^1Y^2$ ,  $-OR^4$ ,  $-OCF_2H$ ,  $-OCF_3$ ,  $-OC(=O)R^4$ ,  $-OC(=O)NY^1Y^2$ ,  $-S(O)_nR^4$  or  $-S(O)_2NY^1Y^2$ ;

and p is zero, or an integer 1;

or an N-oxide, prodrug, acid bioisostere, pharmaceutically acceptable salt or solvate of such  
 10 compound; or an N-oxide, prodrug, or acid bioisostere of such salt or solvate.

55. A compound according to claim 54 wherein

W represents CH; X represents CH; Y represents CH; and Z represents CH or C-CH<sub>3</sub>.

56. A compound according to claim 54 wherein

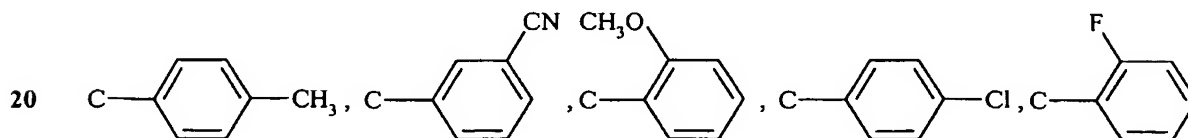
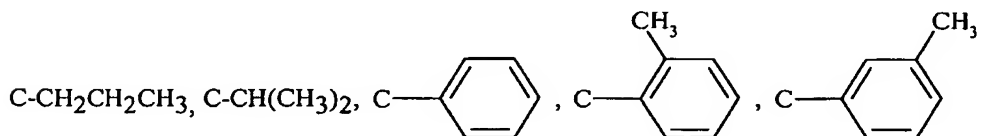
W represents CH; X represents CH; Z represents CH; and Y represents C-C<sub>1-4</sub>alkyl, C-aryl,

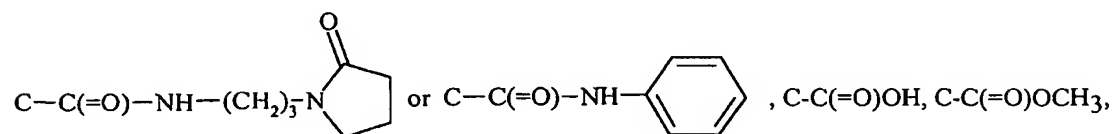
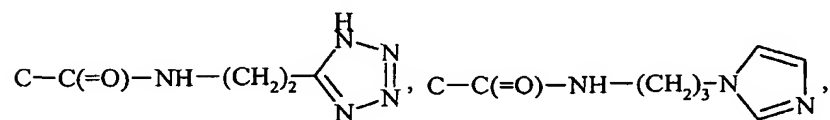
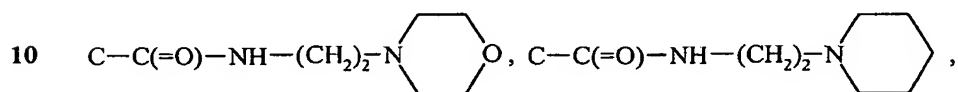
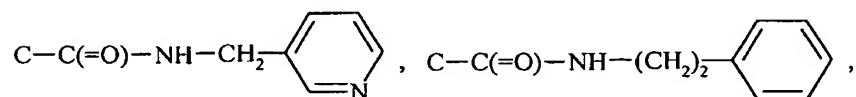
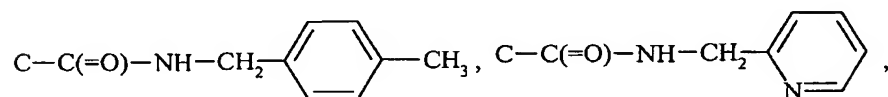
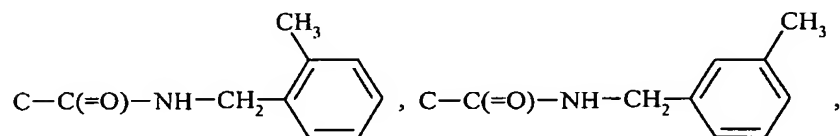
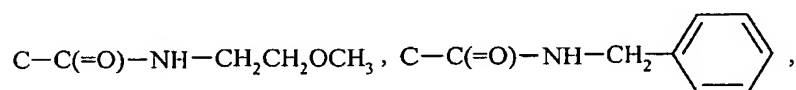
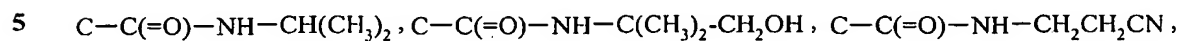
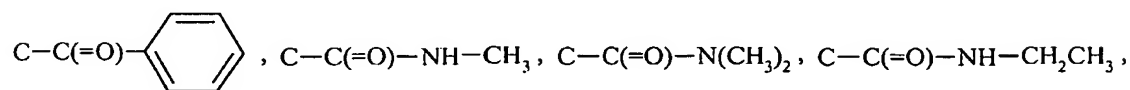
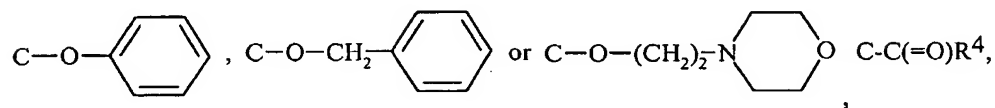
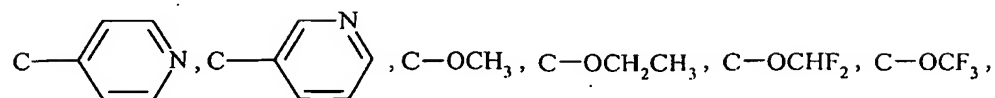
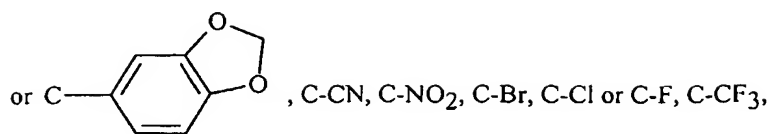
C-CN, C-NO<sub>2</sub>, C-halo, C-haloalkyl, C-heteroaryl, C-OR<sup>4</sup>, C-C(=O)R<sup>4</sup>, C-C(=O)NY<sup>1</sup>Y<sup>2</sup>,

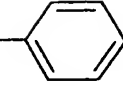
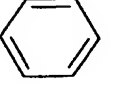

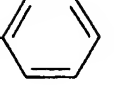
15 C-C(=O)OR<sup>4</sup>, C-NHC(=O)R<sup>4</sup>, C-CH(OH)aryl, C-S(O)<sub>2</sub>NY<sup>1</sup>Y<sup>2</sup>, or C-S(O)<sub>n</sub>R<sup>4</sup>.

57. A compound according to claim 54 wherein

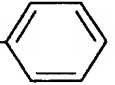
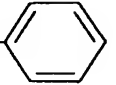
W represents CH; X represents CH; Z represents CH; and Y represents C-CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>3</sub>,





$\text{C-NHC(=O)CH}_3$ ,  $\text{C-NHC(=O)CH(CH}_3)_2$ ,  $\text{C-NH-C(=O)-}$ ,  
 $\text{C-NH-C(=O)-CH}_2$ -,  $\text{C-CH(OH)-}$ ,  $\text{C-SO}_2\text{-NH-CH}_2$ -, or  
 $\text{C-SO}_2\text{CH}_3$ .

- 5 58. A compound according to claim 54 wherein W represents CH; X represents C-CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>3</sub>, C-CH(CH<sub>3</sub>)<sub>2</sub>, C-OCH<sub>3</sub>, C-OCH<sub>2</sub>CH<sub>3</sub>, C-Br or C-Cl; Y represents C-CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>3</sub>,

$\text{C-OCH}_3$ , C-Br, C-Cl, C-F, C- or  $\text{C-C(=O)-NH-CH}_2$ - and Z represents CH.

- 10 59. A compound according to claim 54 wherein W represents CH; X represents CH; Y represents C-CH<sub>3</sub>; and Z represents C-CH<sub>3</sub>.

60. A compound according to claim 54 wherein W represents CH; X represents CR<sup>2</sup> and Y represents CR<sup>3</sup> where R<sup>2</sup> and R<sup>3</sup> form the group -CH<sub>2</sub>-O-CH<sub>2</sub>-; and Z represents CH.

- 15 61. A compound according to claim 54 wherein W represents CH; X represents CR<sup>2</sup> and Y represents CR<sup>3</sup> where R<sup>2</sup> and R<sup>3</sup> form the group -CH<sub>2</sub>-CH<sub>2</sub>-CH<sub>2</sub>-; and Z represents CH.

62. A compound according to claim 54 wherein R<sup>7</sup> represents hydrogen.

- 20 63. A compound according to claim 54 wherein p is zero or one.

64. A compound according to claim 54 wherein R<sup>10</sup> represents cyano, halo, C<sub>1-4</sub>alkyl, -OR<sup>4</sup>, or -C(=O)NY<sup>1</sup>Y<sup>2</sup>.


- 25 65. A compound according to claim 54 wherein R<sup>10</sup> represents cyano, chloro, fluoro, methyl, -OCH<sub>3</sub>, -OCH<sub>2</sub>CH<sub>3</sub>, -C(=O)-NH<sub>2</sub>, -C(=O)-NHCH(CH<sub>3</sub>)<sub>2</sub>, or -C(=O)-N(CH<sub>3</sub>)<sub>2</sub>.

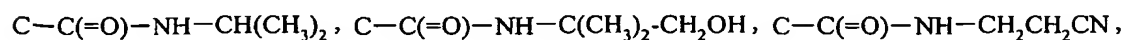
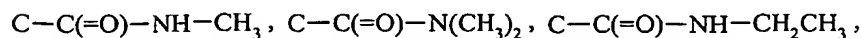
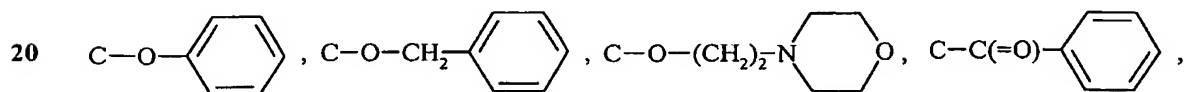
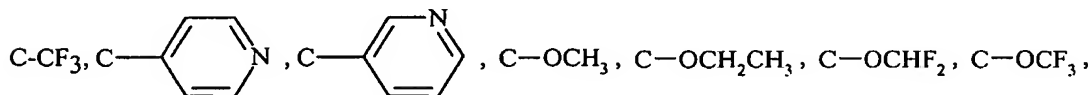
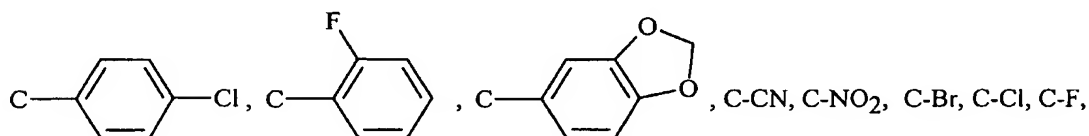
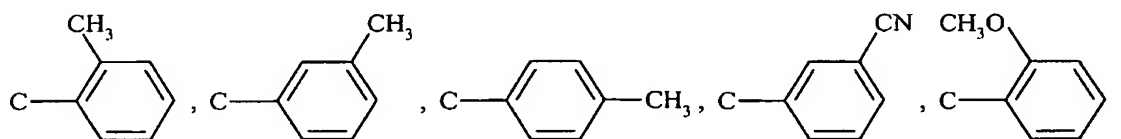
66. A compound according to claim 54 wherein W represents CH; X represents CH; Y represents CH; Z represents CH or C-CH<sub>3</sub>; R<sup>7</sup> represents hydrogen; and R<sup>10</sup> represents cyano, halo, C<sub>1-4</sub>alkyl, -OR<sup>4</sup> or -C(=O)NY<sup>1</sup>Y<sup>2</sup>.

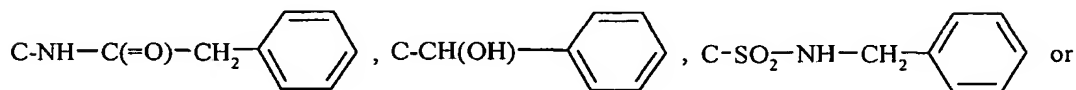
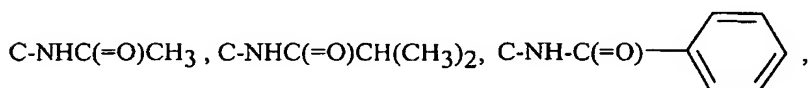
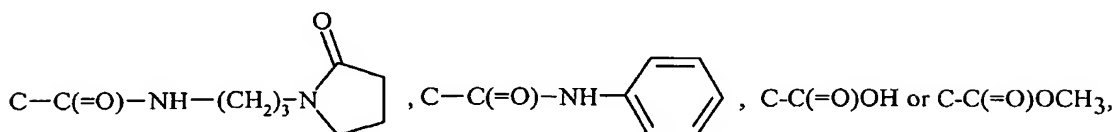
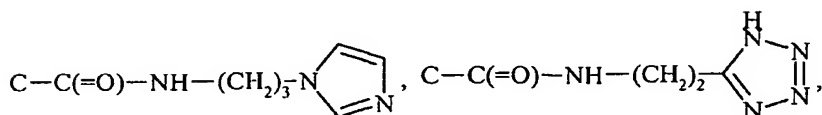
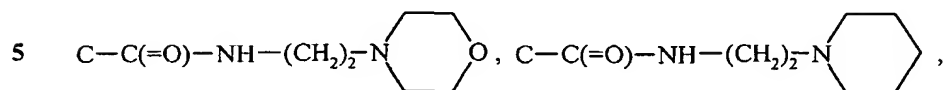
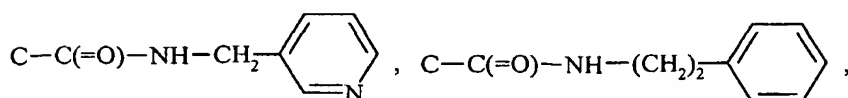
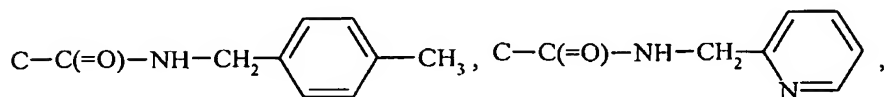
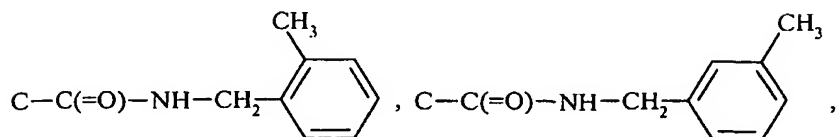
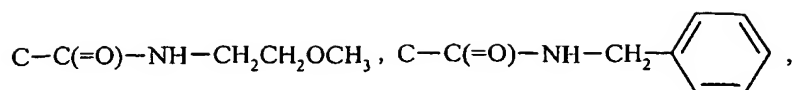
5 67. A compound according to claim 54 wherein W represents CH; X represents CH; Y represents CH; Z represents CH or C-CH<sub>3</sub>; R<sup>7</sup> represents hydrogen; and R<sup>10</sup> represents cyano, chloro, fluoro, methyl, -OCH<sub>3</sub> or -OCH<sub>2</sub>CH<sub>3</sub>, -C(=O)-NH<sub>2</sub>, -C(=O)-NHCH(CH<sub>3</sub>)<sub>2</sub> or -C(=O)-N(CH<sub>3</sub>)<sub>2</sub>.

68. A compound according to claim 54 wherein W represents CH; X represents CH; Z represents CH; Y represents C-C<sub>1-4</sub>alkyl, C-aryl, C-CN, C-NO<sub>2</sub>, C-halo, C-haloalkyl, C-OR<sup>4</sup>, C-C(=O)R<sup>4</sup>, C-C(=O)NY<sup>1</sup>Y<sup>2</sup>, -C(=O)OR<sup>4</sup>, C-NHC(=O)R<sup>4</sup>, C-S(O)<sub>2</sub>NY<sup>1</sup>Y<sup>2</sup>, or C-S(O)<sub>n</sub>R<sup>4</sup>; R<sup>7</sup> represents hydrogen; p is zero or one; and R<sup>10</sup> represents cyano, halo, C<sub>1-4</sub>alkyl, -OR<sup>4</sup>, -C(=O)NY<sup>1</sup>Y<sup>2</sup>.

15 69. A compound according to claim 54 wherein W represents CH; X represents CH; Z

represents CH; Y represents C-CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>2</sub>CH<sub>3</sub>, C-CH(CH<sub>3</sub>)<sub>2</sub>, C-,




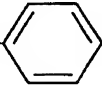


- 10  $\text{C}-\text{SO}_2\text{CH}_3$ ;  $\text{R}^7$  represents hydrogen; p is zero or one;  $\text{R}^{10}$  represents cyano, chloro, fluoro, methyl,  $-\text{OCH}_3$ ,  $-\text{OCH}_2\text{CH}_3$ ,  $-\text{C}(=\text{O})-\text{NH}_2$ ,  $-\text{C}(=\text{O})-\text{NHCH}(\text{CH}_3)_2$  or  $-\text{C}(=\text{O})-\text{N}(\text{CH}_3)_2$ .

70. A compound according to claim 54 wherein W represents CH; X represents C-CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>3</sub>, C-CH(CH<sub>3</sub>)<sub>2</sub>, C-OCH<sub>3</sub>, C-OCH<sub>2</sub>CH<sub>3</sub>, C-Br or C-Cl; Y represents C-CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>3</sub>,

- 15  $\text{C}-\text{OCH}_3$ , C-Br, C-Cl, C-F,  $\text{C}-\text{C}_6\text{H}_5$  or  $\text{C}-\text{C}(=\text{O})-\text{NH}-\text{CH}_2-\text{C}_6\text{H}_5$ ; Z represents CH;

$R^7$  represents hydrogen; p is zero or one; and  $R^{10}$  represents cyano, halo,  $C_{1-4}$ alkyl,  $OR^4$ , or  $-C(=O)NY^1Y^2$ .

71. A compound according to claim 54 wherein W represents CH; X represents C-CH<sub>3</sub>,  
 5 C-CH<sub>2</sub>CH<sub>3</sub>, C-CH(CH<sub>3</sub>)<sub>2</sub>, C-OCH<sub>3</sub>, C-OCH<sub>2</sub>CH<sub>3</sub>, C-Br or C-Cl; Y represents C-CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>3</sub>,  
 C-OCH<sub>3</sub>, C-Br, C-Cl, C-F, C- or C-C(=O)-NH-CH<sub>2</sub>-; Z represents CH;

$R^7$  represents hydrogen; p is zero or one;  $R^{10}$  represents cyano, halo, chloro, fluoro, methyl, -OCH<sub>3</sub>,  
 -OCH<sub>2</sub>CH<sub>3</sub>, -C(=O)-NH<sub>2</sub>, -C(=O)-NHCH(CH<sub>3</sub>)<sub>2</sub> or -C(=O)-N(CH<sub>3</sub>)<sub>2</sub>.

- 10 72. A compound according to claim 54 wherein W represents CH; X represents CH; Y  
 represents C-CH<sub>3</sub>; Z represents C-CH<sub>3</sub>;  $R^7$  represents hydrogen; p is zero or one; and  $R^{10}$  represents  
 cyano, halo,  $C_{1-4}$ alkyl,  $-OR^4$ , or  $-C(=O)NY^1Y^2$ .

73. A compound according to claim 54 wherein W represents CH; X represents CH; Y  
 15 represents C-CH<sub>3</sub>; Z represents C-CH<sub>3</sub>;  $R^7$  represents hydrogen; p is zero or one; and  $R^{10}$  represents  
 cyano, chloro, fluoro, methyl, -OCH<sub>3</sub>, -OCH<sub>2</sub>CH<sub>3</sub>, -C(=O)-NH<sub>2</sub>, -C(=O)-NHCH(CH<sub>3</sub>)<sub>2</sub> or -C(=O)-  
 N(CH<sub>3</sub>)<sub>2</sub>.

74. A compound according to claim 54 wherein W represents CH; X represents CR<sup>2</sup> and Y  
 20 represents CR<sup>3</sup> where R<sup>2</sup> and R<sup>3</sup> form the group -CH<sub>2</sub>-O-CH<sub>2</sub>-; Z represents CH;  $R^7$  represents  
 hydrogen; p is zero or one; and  $R^{10}$  represents cyano, halo,  $C_{1-4}$ alkyl,  $-OR^4$ , or  $-C(=O)NY^1Y^2$ .

75. A compound according to claim 54 wherein W represents CH; X represents CR<sup>2</sup> and Y  
 represents CR<sup>3</sup> where R<sup>2</sup> and R<sup>3</sup> form the group -CH<sub>2</sub>-O-CH<sub>2</sub>-; Z represents CH;  $R^7$  represents  
 25 hydrogen; p is zero or one; and  $R^{10}$  represents cyano, chloro, fluoro, methyl, -OCH<sub>3</sub>, -OCH<sub>2</sub>CH<sub>3</sub>,  
 -C(=O)-NH<sub>2</sub>, -C(=O)-NHCH(CH<sub>3</sub>)<sub>2</sub> or -C(=O)-N(CH<sub>3</sub>)<sub>2</sub>.

76. A compound according to claim 54 wherein W represents CH; X represents  $CR^2$  and Y represents  $CR^3$  where  $R^2$  and  $R^3$  form the group  $-CH_2-CH_2-CH_2-$ ; Z represents CH;  $R^7$  represents hydrogen; p is zero or one; and  $R^{10}$  represents cyano, halo, C1-4alkyl,  $-OR^4$ , or  $-C(=O)NY^1Y^2$ .

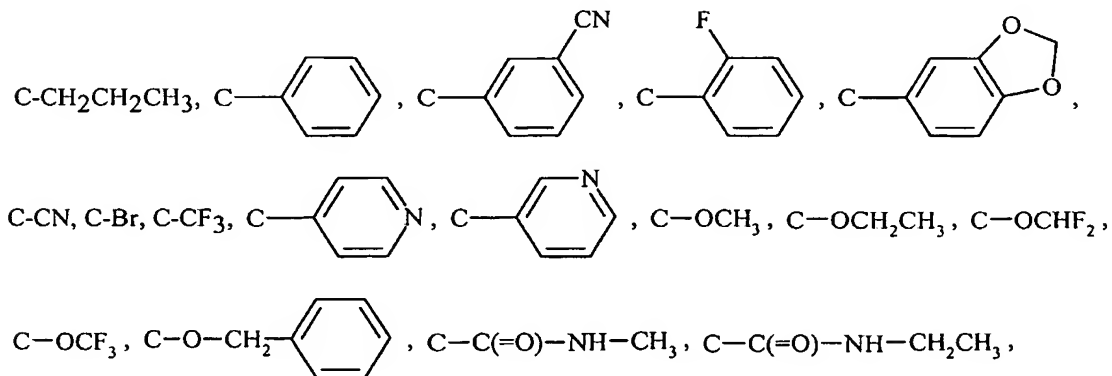
5 77. A compound according to claim 54 wherein W represents CH; X represents  $CR^2$  and Y represents  $CR^3$  where  $R^2$  and  $R^3$  form the group  $-CH_2-CH_2-CH_2-$ ; Z represents CH;  $R^7$  represents hydrogen; p is zero or one; and  $R^{10}$  represents cyano, chloro, fluoro, methyl,  $-OCH_3$ ,  $-OCH_2CH_3$ ,  $-C(=O)-NH_2$ ,  $-C(=O)-NHCH(CH_3)_2$  or  $-C(=O)-N(CH_3)_2$ .

10 78. A compound according to claim 54 wherein  $R^7$  represents hydrogen and p is zero.

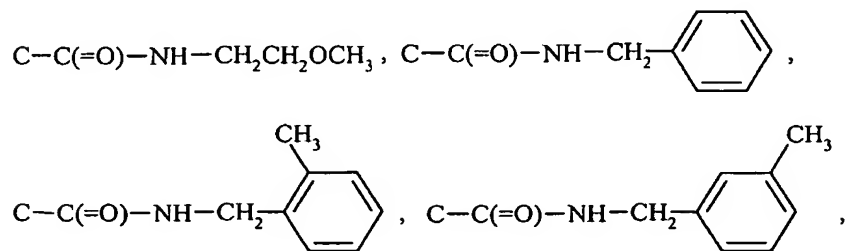
79. A compound according to claim 54 wherein  $R^7$  represents hydrogen; p is one; and  $R^{10}$  represents cyano, chloro, fluoro, methyl,  $-OCH_3$ ,  $-OCH_2CH_3$ ,  $-C(=O)-NH_2$ ,  $-C(=O)-NHCH(CH_3)_2$  or  $-C(=O)-N(CH_3)_2$ .

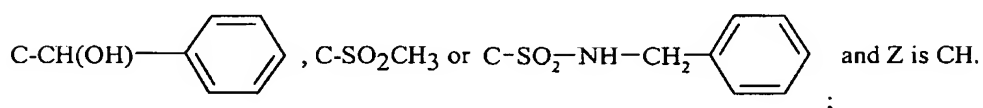
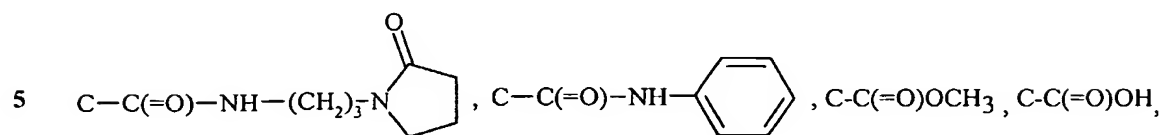
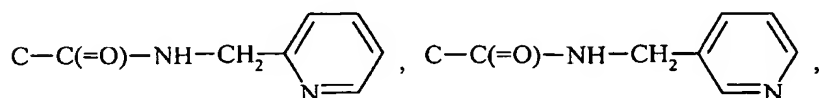
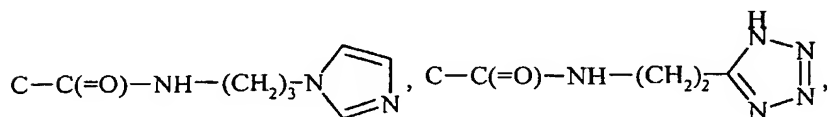
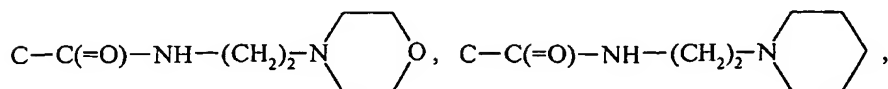
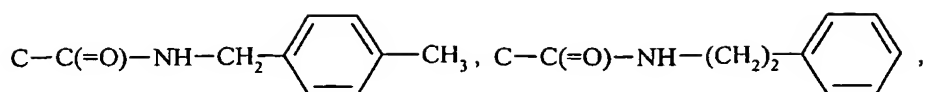
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80. A compound according to claim 54 wherein W is CH; X is CH; Y is CH,  $C-CH_2CH_3$ ,

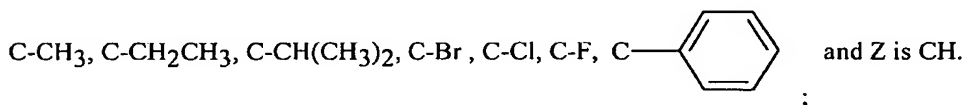


20  $C-C(=O)-NH-CH(CH_3)_2$ ,  $C-C(=O)-NH-C(CH_3)_2-CH_2OH$ ,  $C-C(=O)-NH-CH_2CH_2CN$ ,





81. A compound according to claim 54 wherein W is CH; X is C-CH<sub>3</sub> or C-CH<sub>2</sub>CH<sub>3</sub>; Y is



10

82. A compound according to claim 54 wherein W is CH; X is C-OCH<sub>3</sub>; Y is CH, C-CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>3</sub>, C-Cl or C-OCH<sub>3</sub>; and Z is CH.

83. A compound according to claim 54 wherein W is CH; X is C-OCH<sub>2</sub>CH<sub>3</sub>; Y is C-F and

15 Z is CH.

84. A compound according to claim 54 wherein W represents CH; X represents CR<sup>2</sup> and Y represents CR<sup>3</sup> where R<sup>2</sup> and R<sup>3</sup> form the group -CH<sub>2</sub>-CH<sub>2</sub>-CH<sub>2</sub>-; and Z represents CH.



85. A compound according to claim 54 wherein W represents CH; X represents CR<sup>2</sup> and Y represents CR<sup>3</sup> where R<sup>2</sup> and R<sup>3</sup> form the group -CH<sub>2</sub>-O-CH<sub>2</sub>-; and Z represents CH.

86. A compound according to claim 54 wherein R<sup>7</sup> represents hydrogen and p is zero.

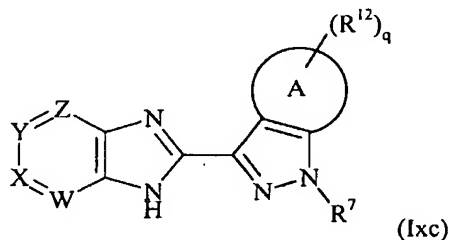
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87. A compound according to claim 54 wherein R<sup>7</sup> represents hydrogen; p is one; and R<sup>10</sup> represents -OCH<sub>3</sub>, -OCH<sub>2</sub>CH<sub>3</sub> or -C(=O)-NHCH(CH<sub>3</sub>)<sub>2</sub> attached to position 5 of the indazolyl ring.

88. A compound according to claim 54 wherein W is CH; X is C-CH<sub>3</sub> or C-CH<sub>2</sub>CH<sub>3</sub>; Y is C-CH<sub>3</sub> or C-CH<sub>2</sub>CH<sub>3</sub> and Z is CH.

10

89. A compound according to claim 3 of the formula (Ixc)



15

wherein R<sup>7</sup> is hydrogen or alkyl;



is a C<sub>5-8</sub>cycloalkyl ring; and R<sup>12</sup> is acyl, acylamino, alkoxy, alkoxycarbonyl, alkylenedioxy,

alkylsulfinyl, alkylsulfonyl, alkylthio, aroyl, aroylamino, aryl, arylalkyloxy, arylalkyloxycarbonyl, arylalkylthio, aryloxy, aryloxycarbonyl, arylsulfinyl, arylsulfonyl, arylthio, carboxy or an acid bioisostere, cyano, cycloalkyl, halo, heteroaroyl, heteroaryl, heteroarylalkyloxy, heteroaroylamino,

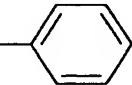
20 heteroaryloxy, heterocycloalkyl, hydroxy, nitro, trifluoromethyl, -C(=O)NY<sup>1</sup>Y<sup>2</sup>, -NY<sup>1</sup>-C(=O)alkyl, -NY<sup>1</sup>SO<sub>2</sub>alkyl, -NY<sup>1</sup>Y<sup>2</sup>, -SO<sub>2</sub>NY<sup>1</sup>Y<sup>2</sup> or alkyl, alkenyl or alkynyl each optionally substituted with

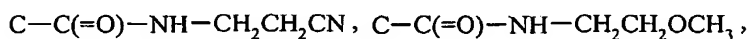
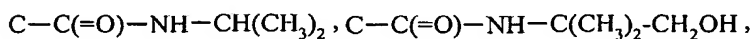
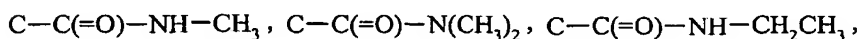
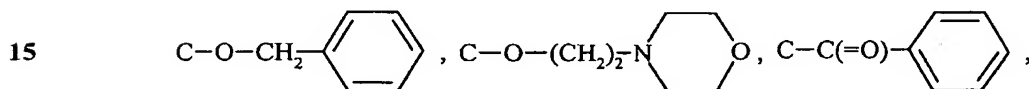
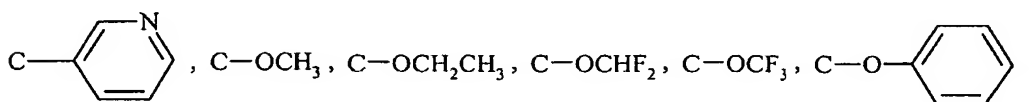
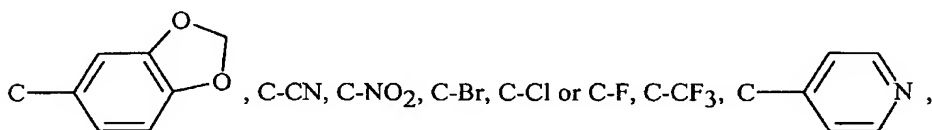
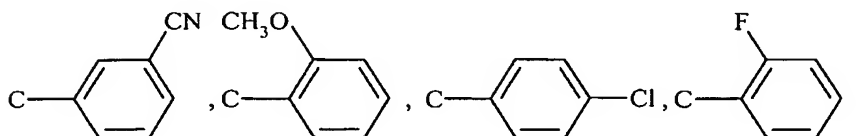
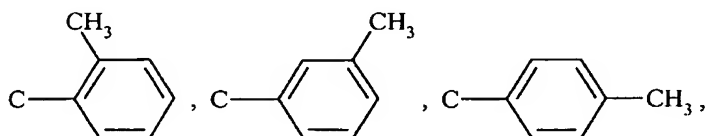
aryl, cycloalkyl, heteroaryl, hydroxy, -C(=O)OR<sup>6</sup>, -C(=O)NY<sup>1</sup>Y<sup>2</sup>, -NY<sup>1</sup>Y<sup>2</sup> or -OR<sup>5</sup>; or an N-oxide, prodrug, acid bioisostere, pharmaceutically acceptable salt or solvate of such compound; or an N-oxide, prodrug, or acid bioisostere of such salt or solvate.

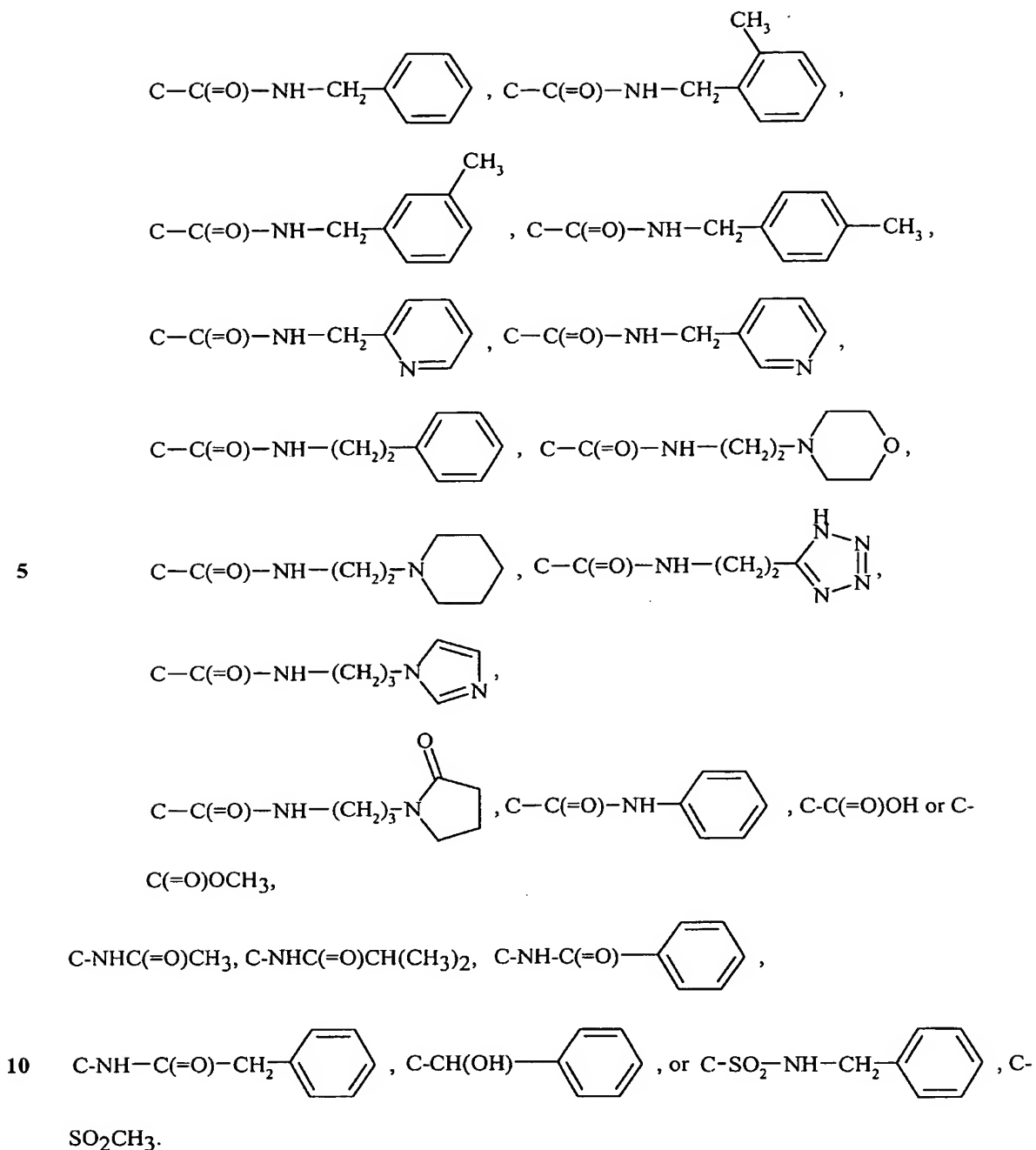
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90. A compound according to claim 89 wherein W represents CH; X represents CH; Y represents CH; and Z represents CH or C-CH<sub>3</sub>.

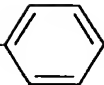
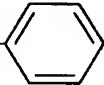
91. A compound according to claim 89 wherein W represents CH; X represents CH; Z represents CH; and Y represents C-C<sub>1-4</sub>alkyl, C-aryl, C-CN, C-NO<sub>2</sub>, C-halo; C-haloalkyl, C-heteroaryl, C-OR<sup>4</sup>, C-C(=O)R<sup>4</sup>, C-C(=O)NY<sup>1</sup>Y<sup>2</sup>, C-C(=O)OR<sup>4</sup>, C-NHC(=O)R<sup>4</sup>, C-CH(OH)aryl, C-S(O)<sub>2</sub>NY<sup>1</sup>Y<sup>2</sup>, or C-S(O)<sub>n</sub>R<sup>4</sup>.

92. A compound according to claim 89 wherein W represents CH; X represents CH; Z represents CH; and Y represents C-CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>2</sub>CH<sub>3</sub>, C-CH(CH<sub>3</sub>)<sub>2</sub>, C-,



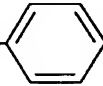
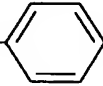


93. A compound according to claim 89 wherein W represents CH; X represents C-CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>3</sub>, C-CH(CH<sub>3</sub>)<sub>2</sub>, C-OCH<sub>3</sub>, C-OCH<sub>2</sub>CH<sub>3</sub>, C-Br or C-Cl; Y represents C-CH<sub>3</sub>,

C-CH<sub>2</sub>CH<sub>3</sub>, C-OCH<sub>3</sub>, C-Br, C-Cl, C-F, C- or C-C(=O)-NH-CH<sub>2</sub>- and ;

Z represents CH.


94. A compound according to claim 89 wherein W represents CH; X represents C-CH<sub>3</sub>,  
 5 C-CH<sub>2</sub>CH<sub>3</sub>, C-CH(CH<sub>3</sub>)<sub>2</sub>, C-OCH<sub>3</sub>, C-OCH<sub>2</sub>CH<sub>3</sub>, C-Br or C-Cl; Y represents C-CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>3</sub>,


C-OCH<sub>3</sub>, C-Br, C-Cl, C-F, C- or C-C(=O)-NH-CH<sub>2</sub>- and Z represents  
 CH.

95. A compound according to claim 89 wherein W represents CH; X represents CR<sup>2</sup> and Y  
 10 represents CR<sup>3</sup> where R<sup>2</sup> and R<sup>3</sup> form the group -CH<sub>2</sub>-O-CH<sub>2</sub>-; and Z represents CH.


96. A compound according to claim 89 wherein W represents CH; X represents CR<sup>2</sup> and Y  
 represents CR<sup>3</sup> where R<sup>2</sup> and R<sup>3</sup> form the group -CH<sub>2</sub>-CH<sub>2</sub>-CH<sub>2</sub>-; and Z represents CH.

- 15 97. A compound according to claim 89 wherein R<sup>7</sup> represents hydrogen.


98. A compound according to claim 89 wherein  represents a cyclopentyl, cyclohexyl or  
 cycloheptyl ring.

- 20 99. A compound according to claim 89 wherein  represents a cyclohexyl ring.

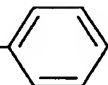
100. A compound according to claim 89 wherein q is zero.

101. A compound according to claim 89 wherein W represents CH; X represents CH; Y represents  
 25 CH; Z represents CH or C-CH<sub>3</sub>; R<sup>7</sup> represents hydrogen; and  represents a cyclopentyl,  
 cyclohexyl or cycloheptyl ring; and q is zero.

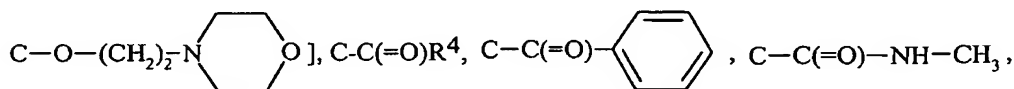
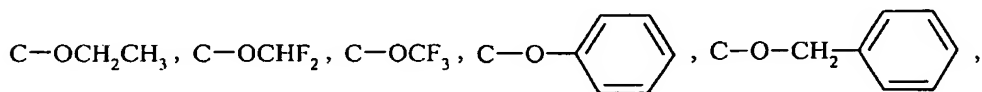
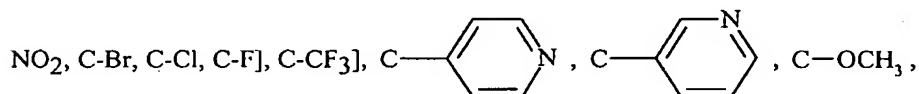
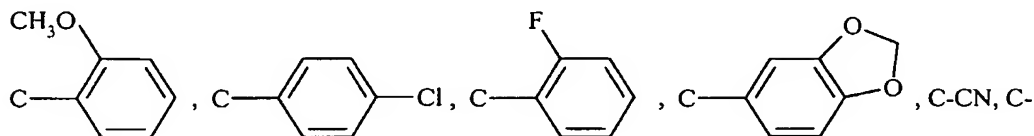
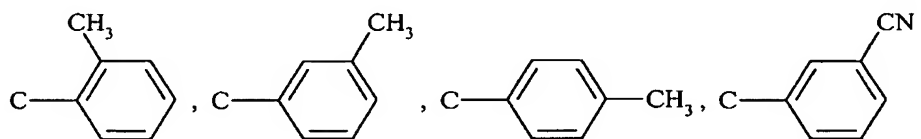
102. A compound according to claim 89 wherein W represents CH; X represents CH; Z represents CH; Y represents C-C<sub>1-4</sub>alkyl, C-aryl, C-CN, C-NO<sub>2</sub>, C-halo, C-haloalkyl, C-heteroaryl, C-OR<sup>4</sup>, C-C(=O)R<sup>4</sup>, C-C(=O)NY<sup>1</sup>Y<sup>2</sup>, -C(=O)OR<sup>4</sup>, C-NHC(=O)R<sup>4</sup>, C-CH(OH)aryl, C-S(O)<sub>2</sub>NY<sup>1</sup>Y<sup>2</sup>,

5 C-S(O)<sub>n</sub>R<sup>4</sup>, R<sup>7</sup> represents hydrogen;  represents a cyclopentyl, cyclohexyl or cycloheptyl ring; and q is zero.

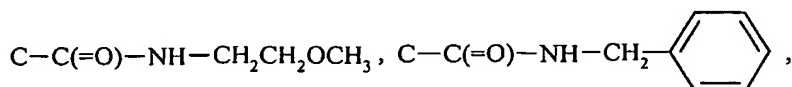
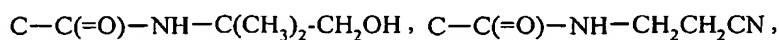
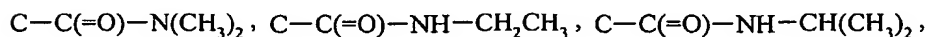
103. A compound according to claim 89 wherein W represents CH; X represents CH; Z represents

CH; Y represents C-CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>2</sub>CH<sub>3</sub>, C-CH(CH<sub>3</sub>)<sub>2</sub>, C-,


10





15



- $\text{C}-\text{C}(=\text{O})-\text{NH}-\text{CH}_2-\text{C}_6\text{H}_4\text{CH}_3$ ,  $\text{C}-\text{C}(=\text{O})-\text{NH}-\text{CH}_2-\text{C}_6\text{H}_4\text{CH}_3$ ,  
 $\text{C}-\text{C}(=\text{O})-\text{NH}-\text{CH}_2-\text{C}_6\text{H}_4\text{CH}_3$ ,  $\text{C}-\text{C}(=\text{O})-\text{NH}-\text{CH}_2-\text{C}_5\text{H}_4\text{N}$ ,  
 $\text{C}-\text{C}(=\text{O})-\text{NH}-\text{CH}_2-\text{C}_5\text{H}_4\text{N}$ ,  $\text{C}-\text{C}(=\text{O})-\text{NH}-(\text{CH}_2)_2-\text{C}_6\text{H}_5$ ,  
 $\text{C}-\text{C}(=\text{O})-\text{NH}-(\text{CH}_2)_2\text{N} \text{ (piperidine ring)}$ ,  $\text{C}-\text{C}(=\text{O})-\text{NH}-(\text{CH}_2)_2\text{N} \text{ (piperidine ring)}$ ,  
5  $\text{C}-\text{C}(=\text{O})-\text{NH}-(\text{CH}_2)_3\text{N} \text{ (pyrrolidine ring)}$ ,  $\text{C}-\text{C}(=\text{O})-\text{NH}-(\text{CH}_2)_2\text{N} \text{ (1,2,4-triazole ring)}$ ,  
 $\text{C}-\text{C}(=\text{O})-\text{NH}-(\text{CH}_2)_3\text{N} \text{ (cyclopentanone ring)}$ ,  $\text{C}-\text{C}(=\text{O})-\text{NH}-\text{C}_6\text{H}_5$ ,  $\text{C}-\text{C}(=\text{O})\text{OH}$ ,  $\text{C}-$   
 $\text{C}(=\text{O})\text{OCH}_3$ ,  $\text{C}-\text{NHC}(=\text{O})\text{CH}_3$ ,  $\text{C}-\text{NHC}(=\text{O})\text{CH}(\text{CH}_3)_2$ ,  $\text{C}-\text{NH}-\text{C}(=\text{O})-\text{C}_6\text{H}_5$ ,  
 $\text{C}-\text{NH}-\text{C}(=\text{O})-\text{CH}_2-\text{C}_6\text{H}_5$ ,  $\text{C}-\text{CH}(\text{OH})-\text{C}_6\text{H}_5$ ,  $\text{C}-\text{SO}_2-\text{NH}-\text{CH}_2-\text{C}_6\text{H}_5$ ,  
104.  $\text{C}-\text{SO}_2\text{CH}_3$ ;  $\text{R}^7$  represents hydrogen;  $\text{A}$  represents a cyclopentyl, cyclohexyl or  
10 cycloheptyl ring; and q is zero.  
105. A compound according to claim 89 wherein W represents  $\text{CH}$ ; X represents  $\text{C}-\text{CH}_3$ ,  
 $\text{C}-\text{CH}_2\text{CH}_3$ ,  $\text{C}-\text{CH}(\text{CH}_3)_2$ ,  $\text{C}-\text{OCH}_3$ ,  $\text{C}-\text{OCH}_2\text{CH}_3$ ,  $\text{C}-\text{Br}$  or  $\text{C}-\text{Cl}$ ; Y represents  $\text{C}-\text{CH}_3$ ,  $\text{C}-\text{CH}_2\text{CH}_3$ ,  
15  $\text{C}-\text{OCH}_3$ ,  $\text{C}-\text{Br}$ ,  $\text{C}-\text{Cl}$ ,  $\text{C}-\text{F}$ ,  $\text{C}-\text{C}_6\text{H}_5$  or  $\text{C}-\text{C}(=\text{O})-\text{NH}-\text{CH}_2-\text{C}_6\text{H}_5$ ; Z represents  $\text{CH}$ ;

$R^7$  represents hydrogen;  represents a cyclopentyl, cyclohexyl or cycloheptyl ring; and q is zero.

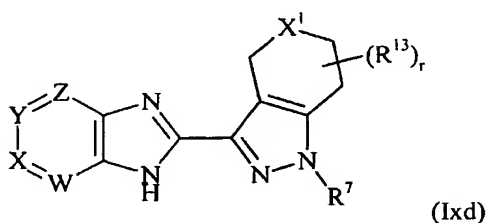
106. A compound according to claim 89 wherein W represents CH; X represents  $CR^2$  and Y represents  $CR^3$  where  $R^2$  and  $R^3$  form the group  $-CH_2-O-CH_2-$ ; Z represents CH;  $R^7$  represents hydrogen;  represents a cyclopentyl, cyclohexyl or cycloheptyl ring; and q is zero.

107. A compound according to claim 89 wherein W represents CH; X represents  $CR^2$  and Y represents  $CR^3$  where  $R^2$  and  $R^3$  form the group  $-CH_2-CH_2-CH_2-$ ; Z represents CH;  $R^7$  represents hydrogen;  represents a cyclopentyl, cyclohexyl or cycloheptyl ring; and q is zero.

108. A compound according to claim 89 wherein  $R^7$  represents hydrogen and q is zero.

109. A compound according to claim 89 wherein W is CH; X is  $C-CH_3$ ; Y is  $C-CH_3$ ; and Z is CH.

110. A compound according to claim 3 of the formula (Ixd)



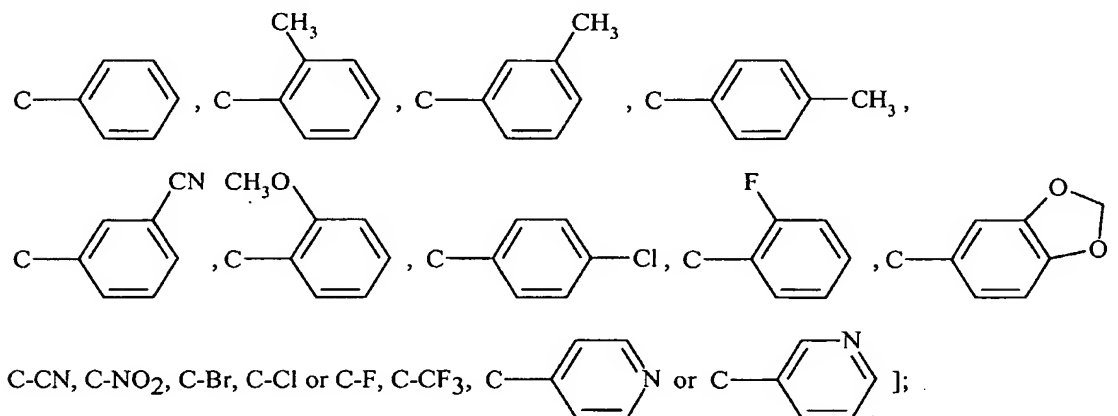
wherein

20  $X^1$  is O, S,  $SO_2$ , or  $NY^5$ , where  $Y^5$  is hydrogen,  $R^4$ ,  $-C(=O)R^4$ ,  $-C(=O)NY^1Y^2$ ,  $-C(=O)OR^4$  or  $Y^5$  is  $-SO_2R^4$ ; r is zero or an integer one or two;  $R^7$  is hydrogen or alkyl; and  $R^{13}$  is alkyl or, when two  $R^{13}$  groups are attached to the same carbon atom, they form an oxo group; or an N-oxide, prodrug, acid bioisostere, pharmaceutically acceptable salt or solvate of such compound; or an N-oxide, prodrug, or acid bioisostere of such salt or solvate.

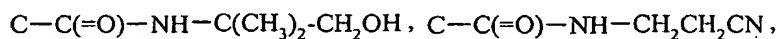
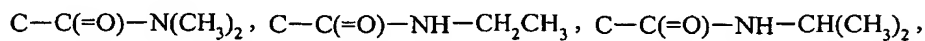
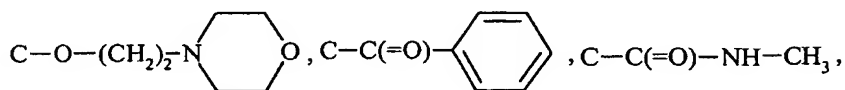
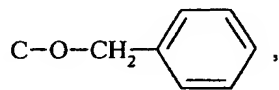
111. A compound according to claim 110 wherein W represents CH; X represents CH; Y represents CH; and Z represents CH or C-CH<sub>3</sub>.

- 5 112. A compound according to claim 110 wherein W represents CH; X represents CH; Z represents CH; and Y represents C-C<sub>1-4</sub>alkyl, C-aryl, C-CN, C-NO<sub>2</sub>, C-halo, C-haloalkyl, C-heteroaryl, C-OR<sup>4</sup>, C-C(=O)R<sup>4</sup>, C-C(=O)NY<sup>1</sup>Y<sup>2</sup>, C-C(=O)OR<sup>4</sup>, C-NHC(=O)R<sup>4</sup>, C-CH(OH)aryl, C-S(O)<sub>2</sub>NY<sup>1</sup>Y<sup>2</sup> or C-S(O)<sub>n</sub>R<sup>4</sup>.

- 10 113. A compound according to claim 110 wherein W represents CH; X represents CH; Z represents CH; and Y represents C-CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>2</sub>CH<sub>3</sub> or C-CH(CH<sub>3</sub>)<sub>2</sub>,

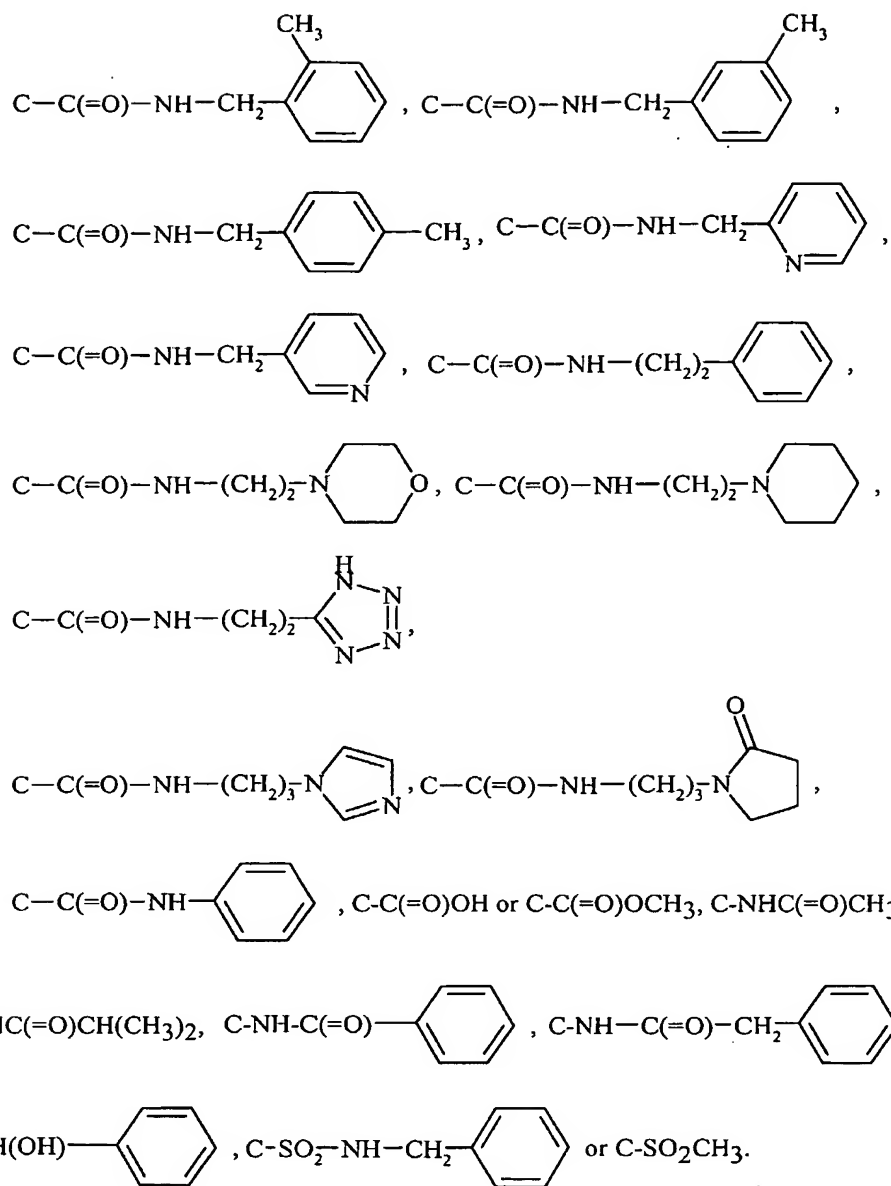


- 15 (viii) C-OR<sup>4</sup> [e.g. C-OCH<sub>3</sub>, C-OCH<sub>2</sub>CH<sub>3</sub>, C-OCHF<sub>2</sub>, C-OCF<sub>3</sub>, C-O-phenyl,



- 20 C-C(=O)-NH-CH<sub>2</sub>CH<sub>2</sub>OCH<sub>3</sub>, C-C(=O)-NH-CH<sub>2</sub>-phenyl,





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114. A compound according to claim 110 wherein W represents CH; X represents C-CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>3</sub>, C-CH(CH<sub>3</sub>)<sub>2</sub>, C-OCH<sub>3</sub>, C-OCH<sub>2</sub>CH<sub>3</sub>, C-Br or C-Cl; Y represents C-CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>3</sub>, C-OCH<sub>3</sub>, C-Br, C-Cl, C-F, C-C<sub>6</sub>H<sub>5</sub> or C-C(=O)-NH-CH<sub>2</sub>-C<sub>6</sub>H<sub>5</sub>; and Z represents CH.

15

115. A compound according to claim 110 wherein W represents CH; X represents CH; Y represents C-CH<sub>3</sub>; and Z represents C-CH<sub>3</sub>.




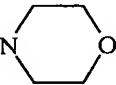
116. A compound according to claim 110 wherein W represents CH; X represents CR<sup>2</sup> and Y represents CR<sup>3</sup> where R<sup>2</sup> and R<sup>3</sup> form the group -CH<sub>2</sub>-O-CH<sub>2</sub>-; and Z represents CH.

117. A compound according to claim 110 wherein W represents CH; X represents CR<sup>2</sup> and Y represents CR<sup>3</sup> where R<sup>2</sup> and R<sup>3</sup> form the group -CH<sub>2</sub>-CH<sub>2</sub>-CH<sub>2</sub>-; and Z represents CH.

118. A compound according to claim 110 wherein R<sup>7</sup> represents hydrogen.

119. A compound according to claim 110 wherein X<sup>1</sup> is O, N-C(=O)R<sup>4</sup>, N-C(=O)NY<sup>1</sup>Y<sup>2</sup>, N-C(=O)OR<sup>4</sup>, or N-SO<sub>2</sub>R<sup>4</sup>; and r is zero.

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120. A compound according to claim 110 wherein X<sup>1</sup> is O, N-C(=O)CH<sub>3</sub>, N-C(=O)CH<sub>2</sub>CH(CH<sub>3</sub>)<sub>2</sub>, N-C(=O)CH(CH<sub>3</sub>)<sub>2</sub>, N-C(=O)C(CH<sub>3</sub>)<sub>3</sub>, N-C(=O)-, N-C(=O)N(CH<sub>3</sub>)<sub>2</sub>, N-C(=O)NCH(CH<sub>3</sub>)<sub>2</sub>, N-C(=O)N(CH<sub>2</sub>CH<sub>3</sub>)<sub>2</sub>, N-C(=O)-N-, N-C(=O)-N-, N-C(=O)-N-, N-C(=O)OCH<sub>3</sub>, N-C(=O)OCH<sub>2</sub>CH<sub>3</sub>, N-SO<sub>2</sub>CH<sub>3</sub> or N-SO<sub>2</sub>CH(CH<sub>3</sub>)<sub>2</sub>; and r is zero.

20


121. A compound according to claim 110 wherein r is zero.


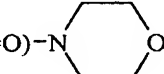
122. A compound according to claim 110 wherein W represents CH; X represents CH; Y represents CH; Z represents CH or C-CH<sub>3</sub>; R<sup>7</sup> represents hydrogen; X<sup>1</sup> is O, N-C(=O)R<sup>4</sup>, N-C(=O)NY<sup>1</sup>Y<sup>2</sup>, N-C(=O)OR<sup>4</sup>, N-SO<sub>2</sub>R<sup>4</sup>; and r is zero.

25

123. A compound according to claim 110 wherein W represents CH; X represents CH; Y represents CH; Z represents CH or C-CH<sub>3</sub>; R<sup>7</sup> represents hydrogen; X<sup>1</sup> is O, N-C(=O)CH<sub>3</sub>, N-

$C(=O)CH_2CH(CH_3)_2$ ,  $N-C(=O)CH(CH_3)_2$ ,  $N-C(=O)C(CH_3)_3$ ,  $N-(C=O)-\triangle$  ],

$N-C(=O)N(CH_3)_2$ ,  $N-C(=O)NCH(CH_3)_2$ ,  $N-C(=O)N(CH_2CH_3)_2$ ,  $N-(C=O)-N$   ,

$N-(C=O)-N$   ,  $N-(C=O)-N$   O,  $N-C(=O)OCH_3$ ,  $N-C(=O)OCH_2CH_3$ ,  $N-SO_2CH_3$

or  $N-SO_2CH(CH_3)_2$ ; and  $r$  is zero.

5

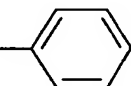
124. A compound according to claim 110 wherein  $W$  represents  $CH$ ;  $X$  represents  $CH$ ;  $Z$  represents  $CH$ ;  $Y$  represents  $C-C_{1-4}$ alkyl,  $C$ -aryl,  $C-CN$ ,  $C-NO_2$ ,  $C$ -halo,  $C$ -haloalkyl,  $C$ -heteroaryl,  $C-OR$ ,

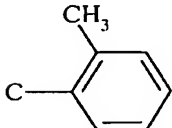
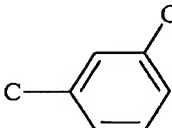
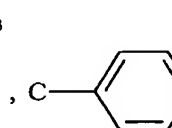
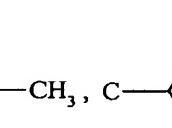
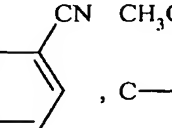
$C-C(=O)R^4$ ,  $C-C(=O)NY^1Y^2$ ,  $-C(=O)OR^4$ ,  $C-NHC(=O)R^4$ ,  $C-S(O)_2NY^1Y^2$ ,  $C-S(O)_nR^4$ ;

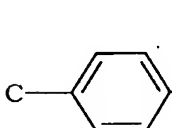
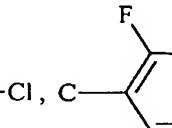
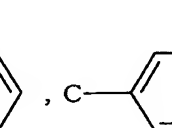
$R^7$  represents hydrogen;  $X^1$  is  $O$ ,  $N-C(=O)R^4$ ,  $N-C(=O)NY^1Y^2$ ,  $N-C(=O)OR^4$ , or  $N-SO_2R^4$ ; and  $r$

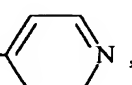
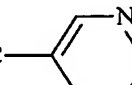
10 is zero.

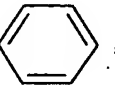
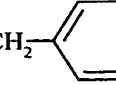
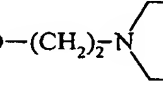
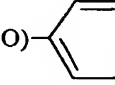
125. A compound according to claim 110 wherein  $W$  represents  $CH$ ;  $X$  represents  $CH$ ;  $Z$  represents

$CH$ ;  $Y$  represents  $C-CH_3$ ,  $C-CH_2CH_3$ ,  $C-CH_2CH_2CH_3$ ,  $C-CH(CH_3)_2$ ,  $C$ - ,

 ,  ,  ,  ,  ,

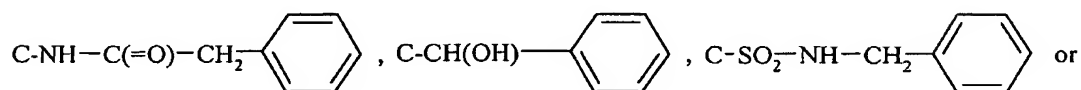
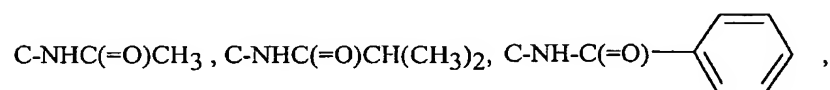
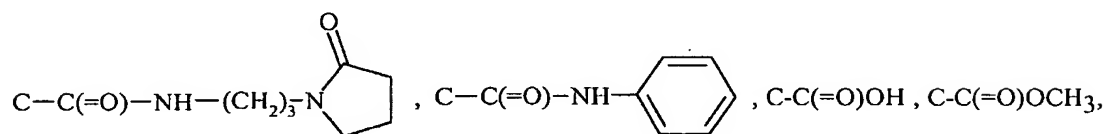
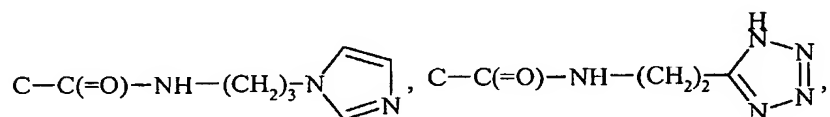
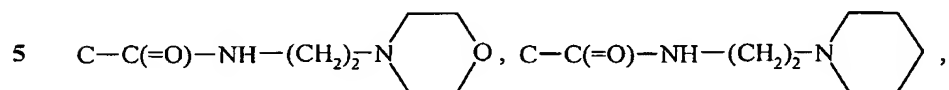
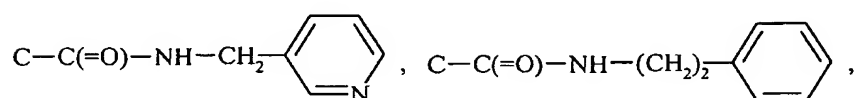
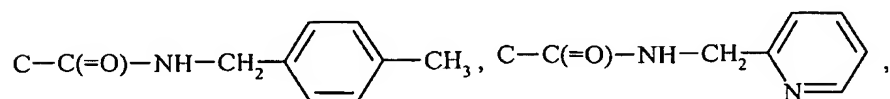
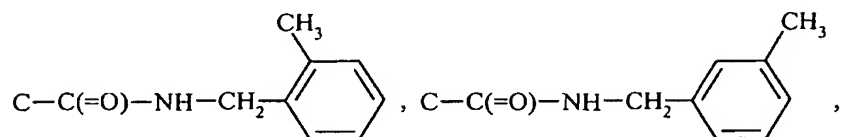
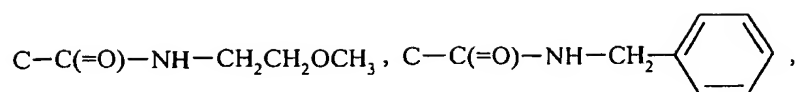
15  ,  ,  ,  $C-CN$ ,  $C-NO_2$ ,  $C-Br$ ,  $C-Cl$  or  $C-F$ ],

$C-CF_3$ ,  $C$ - ,  ,  $C-OCH_3$ ,  $C-OCH_2CH_3$ ,  $C-OCHF_2$ ,  $C-OCF_3$ ,

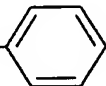
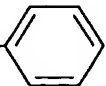
$C-O$ - ,  $C-O-CH_2$ - ,  $C-O-(CH_2)_2N$   O,  $C-C(=O)$ - ,

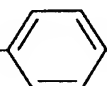
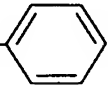
$C-C(=O)-NH-CH_3$ ,  $C-C(=O)-N(CH_3)_2$ ,  $C-C(=O)-NH-CH_2CH_3$ ,





$C-C(=O)-NH-CH(CH_3)_2$ ,  $C-C(=O)-NH-C(CH_3)_2-CH_2OH$ ,  $C-C(=O)-NH-CH_2CH_2CN$ ,




- 10  $\text{C}-\text{SO}_2\text{CH}_3$ ;  $\text{R}^7$  represents hydrogen;  $\text{X}^1$  is O,  $\text{N}-\text{C}(=\text{O})\text{CH}_3$ ,  $\text{N}-\text{C}(=\text{O})\text{CH}_2\text{CH}(\text{CH}_3)_2$ ,  $\text{N}-\text{C}(=\text{O})\text{CH}(\text{CH}_3)_2$ ,  $\text{N}-\text{C}(=\text{O})\text{C}(\text{CH}_3)_3$ ,  $\text{N}-(\text{C}=\text{O})-\text{C}_1\text{H}_5$ ,  $\text{N}-\text{C}(=\text{O})\text{N}(\text{CH}_3)_2$ ,  $\text{N}-\text{C}(=\text{O})\text{NCH}(\text{CH}_3)_2$ ,  $\text{N}-\text{C}(=\text{O})\text{N}(\text{CH}_2\text{CH}_3)_2$ ,  $\text{N}-(\text{C}=\text{O})-\text{N} \begin{array}{c} \diagup \diagdown \\ \text{---} \end{array} \text{C}_4\text{H}_8$ ,  $\text{N}-(\text{C}=\text{O})-\text{N} \begin{array}{c} \diagup \diagdown \\ \text{---} \end{array} \text{C}_6\text{H}_{10}$ ,  $\text{N}-(\text{C}=\text{O})-\text{N} \begin{array}{c} \diagup \diagdown \\ \text{---} \text{O} \text{---} \end{array} \text{C}_6\text{H}_{10}$ ,  $\text{N}-\text{C}(=\text{O})\text{OCH}_3$ ,  $\text{N}-\text{C}(=\text{O})\text{OCH}_2\text{CH}_3$ ,  $\text{N}-\text{SO}_2\text{CH}_3$  or  $\text{N}-\text{SO}_2\text{CH}(\text{CH}_3)$ ; and  $r$  is zero.

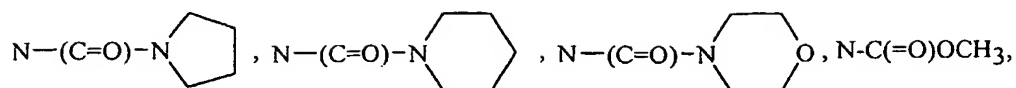
126. A compound according to claim 110 wherein W represents CH; X represents C-CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>3</sub>, C-CH(CH<sub>3</sub>)<sub>2</sub>, C-OCH<sub>3</sub>, C-OCH<sub>2</sub>CH<sub>3</sub>, C-Br or C-Cl; Y represents C-CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>3</sub>, C-OCH<sub>3</sub>, C-Br, C-Cl, C-F, C- or C-C(=O)-NH-CH<sub>2</sub>-; Z represents CH; R<sup>7</sup> represents hydrogen; X<sup>1</sup> is O, N-C(=O)R<sup>4</sup>, N-C(=O)NY<sup>1</sup>Y<sup>2</sup>, N-C(=O)OR<sup>4</sup> or N-SO<sub>2</sub>R<sup>4</sup>; and r is zero.

127. W represents CH; X represents C-CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>3</sub>, C-CH(CH<sub>3</sub>)<sub>2</sub>, C-OCH<sub>3</sub>, C-OCH<sub>2</sub>CH<sub>3</sub>, C-Br or C-Cl; Y represents C-CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>3</sub>, C-OCH<sub>3</sub>, C-Br, C-Cl, C-F, C- or C-C(=O)-NH-CH<sub>2</sub>-; Z represents CH; R<sup>7</sup> represents hydrogen; X<sup>1</sup> is O,

10 N-C(=O)CH<sub>3</sub>, N-C(=O)CH<sub>2</sub>CH(CH<sub>3</sub>)<sub>2</sub>, N-C(=O)CH(CH<sub>3</sub>)<sub>2</sub>, N-C(=O)C(CH<sub>3</sub>)<sub>3</sub> or N-(C=O)-, N-C(=O)N(CH<sub>3</sub>)<sub>2</sub>, N-C(=O)NCH(CH<sub>3</sub>)<sub>2</sub>, N-C(=O)N(CH<sub>2</sub>CH<sub>3</sub>)<sub>2</sub>, N-(C=O)-N-, N-(C=O)-N-, N-(C=O)-N-O, N-C(=O)OCH<sub>3</sub>, N-C(=O)OCH<sub>2</sub>CH<sub>3</sub>, N-SO<sub>2</sub>CH<sub>3</sub> or N-SO<sub>2</sub>CH(CH<sub>3</sub>)<sub>2</sub>; and r is zero.

15 128. A compound according to claim 110 wherein W represents CH; X represents CH; Y represents C-CH<sub>3</sub>; Z represents C-CH<sub>3</sub>; R<sup>7</sup> represents hydrogen; X<sup>1</sup> is O, N-C(=O)R<sup>4</sup>, N-C(=O)NY<sup>1</sup>Y<sup>2</sup>, N-C(=O)OR<sup>4</sup> or N-SO<sub>2</sub>R<sup>4</sup>; and r is zero.

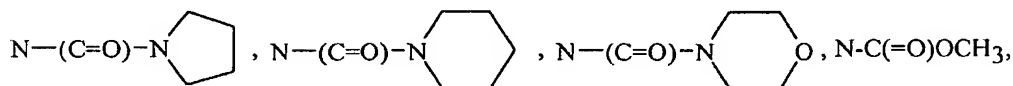
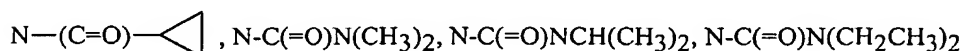
20 129. A compound according to claim 110 wherein W represents CH; X represents CH; Y represents C-CH<sub>3</sub>; Z represents C-CH<sub>3</sub>; R<sup>7</sup> represents hydrogen; X<sup>1</sup> is O, N-C(=O)CH<sub>3</sub>, N-C(=O)CH<sub>2</sub>CH(CH<sub>3</sub>)<sub>2</sub>, N-C(=O)CH(CH<sub>3</sub>)<sub>2</sub>, N-C(=O)C(CH<sub>3</sub>)<sub>3</sub> or N-(C=O)-, N-C(=O)N(CH<sub>3</sub>)<sub>2</sub>, N-C(=O)NCH(CH<sub>3</sub>)<sub>2</sub>, N-C(=O)N(CH<sub>2</sub>CH<sub>3</sub>)<sub>2</sub>



$\text{N}-(\text{C}=\text{O})\text{OCH}_2\text{CH}_3$ ,  $\text{N}-\text{SO}_2\text{CH}_3$  or  $\text{N}-\text{SO}_2\text{CH}(\text{CH}_3)_2$ ; and  $r$  is zero.

130. A compound according to claim 110 wherein  $W$  represents  $\text{CH}$ ;  $X$  represents  $\text{CR}^2$  and  $Y$  represents  $\text{CR}^3$  where  $\text{R}^2$  and  $\text{R}^3$  form the group  $-\text{CH}_2-\text{O}-\text{CH}_2-$ ;  $Z$  represents  $\text{CH}$ ;  $\text{R}^7$  represents hydrogen;  $\text{X}^1$  is  $\text{O}$ ,  $\text{N}-(\text{C}=\text{O})\text{R}^4$ ,  $\text{N}-(\text{C}=\text{O})\text{NY}^1\text{Y}^2$ ,  $\text{N}-(\text{C}=\text{O})\text{OR}^4$  or  $\text{N}-\text{SO}_2\text{R}^4$ ; and  $r$  is zero.

131. A compound according to claim wherein  $W$  represents  $\text{CH}$ ;  $X$  represents  $\text{CR}^2$  and  $Y$  represents  $\text{CR}^3$  where  $\text{R}^2$  and  $\text{R}^3$  form the group  $-\text{CH}_2-\text{O}-\text{CH}_2-$ ;  $Z$  represents  $\text{CH}$ ;  $\text{R}^7$  represents hydrogen;  $\text{X}^1$  is  $\text{O}$ ,  
 $\text{N}-(\text{C}=\text{O})\text{CH}_3$ ,  $\text{N}-(\text{C}=\text{O})\text{CH}_2\text{CH}(\text{CH}_3)_2$ ,  $\text{N}-(\text{C}=\text{O})\text{CH}(\text{CH}_3)_2$ ,  $\text{N}-(\text{C}=\text{O})\text{C}(\text{CH}_3)_3$  or



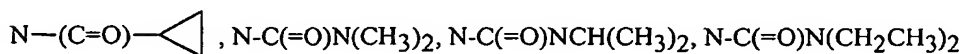
$\text{N}-(\text{C}=\text{O})\text{OCH}_2\text{CH}_3$ ,  $\text{N}-\text{SO}_2\text{CH}_3$  or  $\text{N}-\text{SO}_2\text{CH}(\text{CH}_3)_2$ ; and  $r$  is zero.




15

132. A compound according to claim 110 wherein  
 $W$  represents  $\text{CH}$ ;  $X$  represents  $\text{CR}^2$  and  $Y$  represents  $\text{CR}^3$  where  $\text{R}^2$  and  $\text{R}^3$  form the group  $-\text{CH}_2-\text{CH}_2-\text{CH}_2-$ ;  $Z$  represents  $\text{CH}$ ;  $\text{R}^7$  represents hydrogen;  $\text{X}^1$  is  $\text{O}$ ,  $\text{N}-(\text{C}=\text{O})\text{R}^4$ ,  $\text{N}-(\text{C}=\text{O})\text{NY}^1\text{Y}^2$ ,  
 $\text{N}-(\text{C}=\text{O})\text{OR}^4$  or  $\text{N}-\text{SO}_2\text{R}^4$ ; and  $r$  is zero.



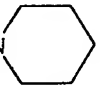

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133. A compound according to claim 110 wherein  
 $W$  represents  $\text{CH}$ ;  $X$  represents  $\text{CR}^2$  and  $Y$  represents  $\text{CR}^3$  where  $\text{R}^2$  and  $\text{R}^3$  form the group  $-\text{CH}_2-\text{CH}_2-\text{CH}_2-$ ;  $Z$  represents  $\text{CH}$ ;  $\text{R}^7$  represents hydrogen;  $\text{X}^1$  is  $\text{O}$ ,  
 $\text{N}-(\text{C}=\text{O})\text{CH}_3$ ,  $\text{N}-(\text{C}=\text{O})\text{CH}_2\text{CH}(\text{CH}_3)_2$ ,  $\text{N}-(\text{C}=\text{O})\text{CH}(\text{CH}_3)_2$ ,  $\text{N}-(\text{C}=\text{O})\text{C}(\text{CH}_3)_3$  or

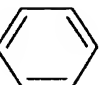
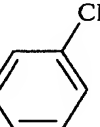
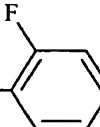
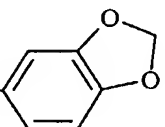
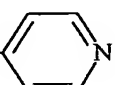
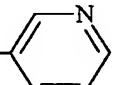
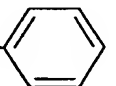


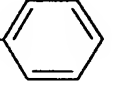
$\text{N}-(\text{C}=\text{O})-\text{N}$  ,  $\text{N}-(\text{C}=\text{O})-\text{N}$  ,  $\text{N}-(\text{C}=\text{O})-\text{N}$  ,  $\text{N}-\text{C}(\text{=O})\text{OCH}_3$ ,  
 $\text{N}-\text{C}(\text{=O})\text{OCH}_2\text{CH}_3$ ,  $\text{N}-\text{SO}_2\text{CH}_3$  or  $\text{N}-\text{SO}_2\text{CH}(\text{CH}_3)_2$ ; and  $r$  is zero.

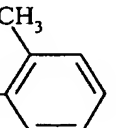
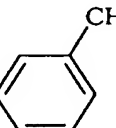
134. A compound according to claim 110 wherein

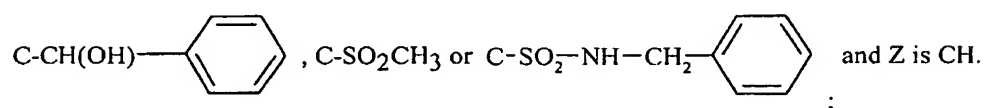
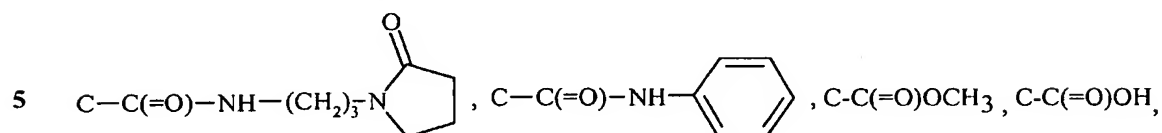
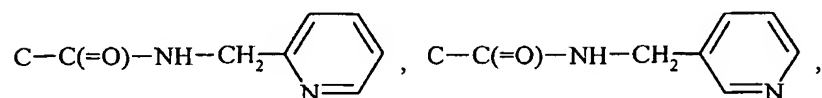
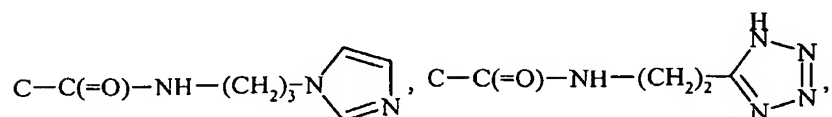
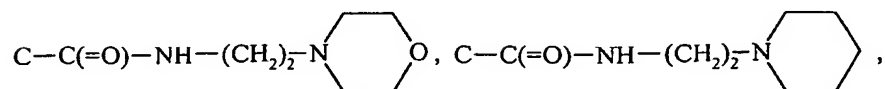
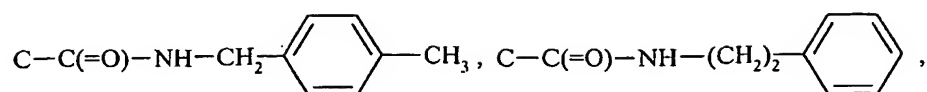
- 5  $\text{X}^1$  is  $\text{N}-\text{C}(\text{=O})\text{CH}(\text{CH}_3)_2$ ,  $\text{N}-\text{C}(\text{=O})\text{CH}_2\text{CH}(\text{CH}_3)_2$ ,  $\text{N}-\text{C}(\text{=O})\text{C}(\text{CH}_3)_3$ ;  $\text{N}-(\text{C}=\text{O})$  ,
- $\text{N}-\text{C}(\text{=O})\text{N}(\text{CH}_3)_2$ ,  $\text{N}-\text{C}(\text{=O})\text{NCH}(\text{CH}_3)_2$ ,  $\text{N}-\text{C}(\text{=O})\text{N}(\text{CH}_2\text{CH}_3)_2$ ,  $\text{N}-(\text{C}=\text{O})-\text{N}$  ,  
 $\text{N}-(\text{C}=\text{O})-\text{N}$  ,  $\text{N}-(\text{C}=\text{O})-\text{N}$  ,  $\text{N}-\text{C}(\text{=O})\text{OCH}_3$  or  $\text{N}-\text{C}(\text{=O})\text{OCH}_2\text{CH}_3$ ; and  $r$  is zero.

- 10 135. A compound according to claim 110 wherein  $W$  is  $\text{CH}$ ;  $X$  is  $\text{CH}$ ;  $Y$  is  $\text{CH}$ ,  $\text{C}-\text{CH}_2\text{CH}_3$ ,

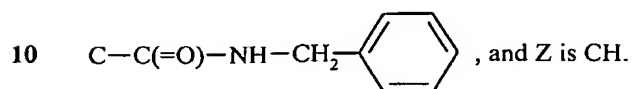
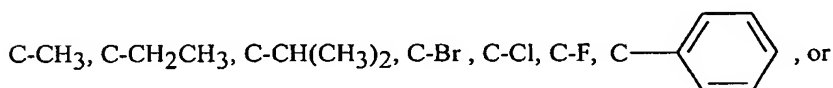
$\text{C}-\text{CH}_2\text{CH}_2\text{CH}_3$ ,  $\text{C}-$  ,  $\text{C}-$  ,  $\text{C}-$  ,  $\text{C}-$  ,  
 $\text{C}-\text{CN}$ ,  $\text{C}-\text{Br}$ ,  $\text{C}-\text{CF}_3$ ,  $\text{C}-$  ,  $\text{C}-$  ,  $\text{C}-\text{OCH}_3$ ,  $\text{C}-\text{OCH}_2\text{CH}_3$ ,  $\text{C}-\text{OCHF}_2$ ,  
 $\text{C}-\text{OCF}_3$ ,  $\text{C}-\text{O}-\text{CH}_2-$  ,  $\text{C}-\text{C}(\text{=O})-\text{NH}-\text{CH}_3$ ,  $\text{C}-\text{C}(\text{=O})-\text{NH}-\text{CH}_2\text{CH}_3$ ,  
 $\text{C}-\text{C}(\text{=O})-\text{NH}-\text{CH}(\text{CH}_3)_2$ ,  $\text{C}-\text{C}(\text{=O})-\text{NH}-\text{C}(\text{CH}_3)_2-\text{CH}_2\text{OH}$ ,  $\text{C}-\text{C}(\text{=O})-\text{NH}-\text{CH}_2\text{CH}_2\text{CN}$ ,

- 15  $\text{C}-\text{C}(\text{=O})-\text{NH}-\text{CH}_2\text{CH}_2\text{OCH}_3$ ,  $\text{C}-\text{C}(\text{=O})-\text{NH}-\text{CH}_2-$  ,

$\text{C}-\text{C}(\text{=O})-\text{NH}-\text{CH}_2-$  ,  $\text{C}-\text{C}(\text{=O})-\text{NH}-\text{CH}_2-$  ,



136. A compound according to claim 110 wherein W is CH; X is C-CH<sub>3</sub> or C-CH<sub>2</sub>CH<sub>3</sub>; Y is



137. A compound according to claim 110 wherein W is CH; X is C-OCH<sub>3</sub>; Y is CH, C-CH<sub>3</sub>, C-CH<sub>2</sub>CH<sub>3</sub>, C-Cl or C-OCH<sub>3</sub>; and Z is CH.

15 138. A compound according to claim 110 wherein W is CH; X is C-OCH<sub>2</sub>CH<sub>3</sub>; Y is C-F; and Z is CH.

139. A compound according to claim 110 wherein W represents CH; X represents CR<sup>2</sup> and Y represents CR<sup>3</sup> where R<sup>2</sup> and R<sup>3</sup> form the group -CH<sub>2</sub>-CH<sub>2</sub>-CH<sub>2</sub>-; and Z represents CH.



140. A compound according to claim 110 wherein W represents CH; X represents CR<sup>2</sup> and Y represents CR<sup>3</sup> where R<sup>2</sup> and R<sup>3</sup> form the group -CH<sub>2</sub>-O-CH<sub>2</sub>-; and Z represents CH.

5 141. A compound according to claim 110 wherein X<sup>1</sup> is  $\text{N}-(\text{C}=\text{O})-\text{Cyclopropyl}$ ,  
 $\text{N}-\text{C}(\text{O})\text{N}(\text{CH}_3)_2$ ,  $\text{N}-\text{C}(\text{O})\text{NCH}(\text{CH}_3)_2$ ,  $\text{N}-\text{C}(\text{O})\text{N}(\text{CH}_2\text{CH}_3)_2$ ,  $\text{N}-(\text{C}=\text{O})-\text{N-Cyclopentyl}$  or  
 $\text{N}-(\text{C}=\text{O})-\text{N-Cyclohexyl}$  and r is zero.

142. A compound according to claim 110 wherein W represents CH; X represents C-CH<sub>3</sub>; Y represents C-CH<sub>3</sub> or C-Cl; and Z represents CH.

143. A compound according to claim 3 which is  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid benzylamide;  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-methylamide;  
 15 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-ethylamide;  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-isopropylamide;  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-phenylamide;  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-phenethylamide;  
 5,6-dimethyl-2-(5-methylsulfanyl-1H-pyrazol-3-yl)-1H-benzoimidazole;  
 20 6-chloro-5-methyl-2-(5-methylsulfanyl-1H-pyrazol-3-yl)-1H-benzoimidazole;  
 6-chloro-2-(5-ethylsulfanyl-1H-pyrazol-3-yl)-5-methyl-1H-benzoimidazole;  
 2-(5-methylsulfanyl-1H-pyrazol-3-yl)-5-trifluoromethyl-1H-benzoimidazole;  
 2-(5-cyclopropylmethylsulfanyl-1H-pyrazol-3-yl)-5,6-dimethyl-1H-benzoimidazole;  
 2-(5-ethylsulfanyl-1H-pyrazol-3-yl)-5,6-dimethyl-1H-benzoimidazole;  
 25 5,6-dimethyl-2-[5-(pyridin-3-ylmethylsulfanyl)-1H-pyrazol-3-yl]-1H-benzoimidazole;  
 5-fluoro-2-[5-methylsulfanyl)-1H-pyrazol-3-yl]-1H-benzoimidazole;  
 5,6-dimethyl-2-(5-phenethylsulfanyl-1H-pyrazol-3-yl)-1H-benzoimidazole;  
 4-methyl-2-(5-methylsulfanyl-1H-pyrazol-3-yl)-1H-benzoimidazole;  
 5,6-dimethyl-2-(5-benzylsulfanyl-1H-pyrazol-3-yl)-1H-benzoimidazole;  
 30 6-chloro-5-methyl-2-(5-morpholin-4-yl-1H-pyrazol-3-yl)-1H-benzoimidazole;

- 5,6-dimethyl-2-[5-(thiophen-2-ylmethylsulfanyl)-1H-pyrazol-3-yl]-1H-benzimidazole;  
2-(5-ethylsulfanyl-1H-pyrazol-3-yl)-5-methoxy-1H-benzimidazole hydrochloride;  
5-methyl-2-(5-methylsulfanyl-4-propyl-1H-pyrazol-3-yl)-1H-benzimidazole;  
2-(5-(4-methoxy-benzylsulfanyl)-4-propyl-1H-pyrazol-3-yl)-5-methyl-1H-benzimidazole;  
5 2-(5-benzylsulfanyl-4-isopropyl-1H-pyrazol-3-yl)-5-methyl-1H-benzimidazole;  
2-(5-methylsulfanyl-4-methyl-1H-pyrazol-3-yl)-5-methoxy-1H-benzimidazole;  
2-(5-methylsulfanyl-4-methyl-1H-pyrazol-3-yl)-5-methyl-1H-benzimidazole;  
3-(5-chloro-1H-benzimidazol-2-yl)-1H-pyrazol-4-ylamine;  
3-(5,6-dichloro-1H-benzimidazol-2-yl)-1H-pyrazol-4-ylamine;  
10 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-ylamine;  
3-(5-ethyl-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-ylamine;  
3-(6-chloro-5-methoxy-1H-benzimidazol-2-yl)-1H-pyrazol-4-ylamine;  
3-(5-methoxy-1H-benzimidazol-2-yl)-1H-pyrazol-4-ylamine;  
3-(5-ethoxy-1H-benzimidazol-2-yl)-1H-pyrazol-4-ylamine;  
15 3-(5-fluoro-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-ylamine;  
3-(5-trifluoromethoxy-1H-benzimidazol-2-yl)-1H-pyrazol-4-ylamine;  
3-(5-trifluoromethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-ylamine;  
2-(4-amino-1H-pyrazol-3-yl)-1H-benzimidazole-5-carboxylic acid methyl ester;  
3-(1H-benzimidazol-2-yl)-1H-indazole;  
20 3-(5-methoxy-1H-benzimidazol-2-yl)-1H-indazole;  
[2-(indazol-3-yl)-1H-benzimidazol-5-yl]-phenyl-methanone;  
2-(1H-indazol-3-yl)-3H-benzimidazol-4-ol;  
2-phenyl-1H-imidazol[4,5-b]pyrazine;  
3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-indazole;  
25 2-(1H-indazol-3-yl)-3H-imidazo[4,5-c]pyridine;  
2-(1H-indazole-3-yl)-3H-imidazo[4,5-b]pyridine;  
2-(1H-pyrazol-3-yl)-1H-benzimidazole;  
3-(5,6-dimethyl-1H-benzimidazol-2-yl)-5-methoxy-1H-indazole;  
3-(5-ethyl-6-methyl-1H-benzimidazol-2-yl)-5-methoxy-1H-indazole;  
30 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-5-fluoro-1H-indazole;  
3-(5,6-dimethyl-1H-benzimidazol-2-yl)-6-fluoro-1H-indazole;  
3-(5,6-dimethyl-1H-benzimidazol-2-yl)-5-methyl-1H-indazole;  
3-(5,6-dimethyl-1H-benzimidazol-2-yl)-6-methoxy-1H-indazole;  
5,6-dimethyl-2-(4-phenyl-1H-pyrazol-3-yl)-1H-benzimidazole;  
35 3-(5-ethyl-1H-benzimidazol-2-yl)-1H-indazole;  
3-(5-ethyl-6-methyl-1H-benzimidazol-2-yl)-1H-indazole;

- 3-(5-isopropyl-6-methyl-1H-benzimidazol-2-yl)-1H-indazole;  
3-(5-bromo-6-methyl-1H-benzimidazol-2-yl)-1H-indazole;  
3-(5-bromo-1H-benzimidazol-2-yl)-1H-indazole;  
3-(5-(3-cyano)phenyl-1H-benzimidazol-2-yl)-1H-indazole;  
5 3-(5-(pyrid-3-yl)-1H-benzimidazol-2-yl)-1H-indazole;  
3-(6-methyl-5-phenyl-1H-benzimidazol-2-yl)-1H-indazole;  
3-(5-phenyl-1H-benzimidazol-2-yl)-1H-indazole;  
3-(5-(2-fluoro)phenyl-1H-benzimidazol-2-yl)-1H-indazole;  
3-(5-(5,6-methylenedioxy)phenyl-1H-benzimidazol-2-yl)-1H-indazole;  
10 3-(5-(2-methoxy)phenyl-1H-benzimidazol-2-yl)-1H-indazole;  
3-(5-(4-chloro)phenyl-1H-benzimidazol-2-yl)-1H-indazole;  
3-(5-(4-methyl)phenyl-1H-benzimidazol-2-yl)-1H-indazole;  
3-(5-benzyloxy-1H-benzimidazol-2-yl)-1H-indazole;  
3-(5,6-methylenedioxy-1H-benzimidazol-2-yl)-1H-indazole;  
15 3-(5,6-dimethoxy-1H-benzimidazol-2-yl)-1H-indazole;  
3-(5,6-diethyl-1H-benzimidazol-2-yl)-1H-indazole;  
3-(4,5-dimethyl-1H-benzimidazol-2-yl)-1H-indazole;  
2-(1H-indazol-3-yl)-1H-benzimidazole-5-carbonitrile;  
3-(5-methoxycarbonyl-1H-benzimidazol-2-yl)-1H-indazole;  
20 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-5-ethoxy-1H-indazole;  
3-(5,6-dimethyl-1H-benzimidazol-2-yl)-pyrazole-4-carboxylic acid ethyl ester;  
2-(4-isopropylcarbamoyl-1H-pyrazol-3-yl)-1H-benzimidazole-5-carboxylic acid methyl ester;  
3-(5,6-dimethyl-1H-benzimidazol-2-yl)-5-methyl-pyrazole-4-carboxylic acid ethyl ester;  
3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1H-pyrazole-4-carboxylic acid cyclopropylamide;  
25 3-(5-methoxy-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isopropylamide;  
3-[5-(2-morpholin-4-yl-ethoxy)-1H-benzimidazol-2-yl]-1H-indazole;  
3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid (2-methoxy-ethyl)-amide;  
3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid propylamide;  
3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid (tetrahydro-pyran-4-yl)-amide;  
30 3-(5-ethyl-6-methyl-1H-benzimidazol-2-yl)-1H-indazole-5-carbonitrile;  
3-(5-difluoromethoxy-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isopropylamide;  
3-(5-difluoromethoxy-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid cyclopropylamide;  
3-(6-ethyl-5-methoxy-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isopropylamide;  
3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-indazole-5-carbonitrile;  
35 2-(5-methyl-1H-pyrazol-3-yl)-1H-benzimidazole;  
2-(5-ethoxy-1H-pyrazol-3-yl)-1H-benzimidazole;

- 2-(5-methylsulfanyl-isoxazol-3-yl)-1H-benzoimidazole;  
5-chloro-2-(4-nitro-1H-pyrazol-3-yl)-1H-benzoimidazole;  
5,6-dichloro-2-(4-nitro-1H-pyrazol-3-yl)-1H-benzoimidazole;  
(benzoimidazol-2-yl)-5-methylthio-3-pyrazole;
- 5 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-4,5,6,7-tetrahydro-1H-indazole;  
2-(5-isopropyl-1H-pyrazol-3-yl)-5,6-dimethyl-1H-benzoimidazole;  
2-(5-ethyl-1H-pyrazol-3-yl)-5,6-dimethyl-1H-benzoimidazole;  
5,6-dimethyl-2-(1,4,5,6-tetrahydro-cyclopentapyrazol-3-yl)-1H-benzoimidazole;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-4-fluoro-1H-indazole;
- 10 4-chloro-3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-indazole;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-5-chloro-1H-indazole;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-indazol-5-ol;  
3-(5-n-propyl-1H-benzoimidazol-2-yl)-1H-indazole;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-sulfonic acid benzylamide;
- 15 3-(5-methanesulfonyl-1H-benzoimidazol-2-yl)-1H-indazole;  
[2-(indazol-3-yl)-1H-benzoimidazol-5-yl]-phenyl-methanol;  
[2-(indazol-3-yl)-1H-benzoimidazol-5-yl]-carboxylic acid;  
[2-(indazol-3-yl)-1H-benzoimidazol-5-yl]-carboxylic acid, methylamide;  
[2-(indazol-3-yl)-1H-benzoimidazol-5-yl]-carboxylic acid, dimethylamide;
- 20 [2-(indazol-3-yl)-1H-benzoimidazol-5-yl]-carboxylic acid, isopropylamide;  
1H-benzoimidazol-5-yl]-carboxylic acid, benzylamide;  
[2-(indazol-3-yl)-1H-benzoimidazol-5-yl]-carboxylic acid, benzamide;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isopropylamide;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid (2-hydroxy-1,1-dimethyl-
- 25 ethyl)-amide;  
2-(4-isopropylcarbamoyl-1H-pyrazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (pyridin-3-ylmethyl)-amide;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-5-methyl-1H-pyrazole-4-carboxylic acid cyclopropylamide;  
2-(4-isopropylcarbamoyl-1H-pyrazol-3-yl)-1H-benzoimidazole-5-carboxylic acid phenylmethyl-amide;
- 30 2-(4-isopropylcarbamoyl-1H-pyrazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (pyridin-2-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (pyridin-3-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 3-methyl-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-methyl-benzylamide;
- 35 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid [3-(2-oxo-pyrrolidin-1-yl)-propyl]-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2-morpholin-4-yl-ethyl)-amide;

- 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2-methoxy-ethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2-cyano-ethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2-hydroxy-1,1-dimethyl-ethyl)-amide;  
2-(1H-Indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (3-imidazol-1-yl-propyl)-amide;
- 5 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isobutyl-amide;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isopropylamide;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid cyclopropylmethyl-amide;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-5-methyl-1H-pyrazole-4-carboxylic acid tert-butylamide;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-indazole-5-carboxylic acid dimethylamide;
- 10 2-(4-isobutylamino-1H-pyrazol-3-yl)-1H-benzoimidazole-5-carboxylic acid benzylamide;  
[2-(indazol-3-yl)-1H-benzoimidazol-5-yl]-carboxylic acid;  
3-(5,6-dimethyl-1H-benzoimidazol-5-yl)-pyrazole-4-carboxylic acid;  
2-(4-isopropylcarbamoyl-1H-pyrazol-3-yl)-1H-benzoimidazole-5-carboxylic acid;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-5-methyl-pyrazole-4-carboxylic acid;
- 15 N-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-isobutyramide ;  
N-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-methyl-butyramide;  
N-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-2-phenyl-acetamide;  
cyclopropanecarboxylic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
methoxyacetic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;
- 20 cyclopentanecarboxylic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
trimethylacetic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
tert-butylacetic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
butanoic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
isoxazole-5-carboxylic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;
- 25 S(+)-2-methylbutanoic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
cyclopropanecarboxylic acid [3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
piperidine-1-carboxylic acid[3-(6-chloro-5-methoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
3-[3-(6-chloro-5-methoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-dimethylurea;  
cyclopropanecarboxylic acid [3-(5-methoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;
- 30 cyclopropanecarboxylic acid [3-(5-ethoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
cyclopropanecarboxylic acid [3-(5-fluoro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
cyclopropanecarboxylic acid [3-(5-trifluoromethoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
cyclopropanecarboxylic acid [3-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
N-[3-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-isobutyramide;
- 35 cyclopropanecarboxylic acid [3-(5-chloro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;

- 3,5-dimethyl-isoxazole-4-carboxylic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;
- N-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-acetamide;
- furan-3-carboxylic acid [3-(5-chloro-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;
- 5 N-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-4-methyl-benzamide;
- 5,6-dimethyl-2-(4-nitro-1H-pyrazol-3-yl)-1H-benzimidazole;
- 5-ethyl-6-methyl-2-(4-nitro-1H-pyrazol-3-yl)-1H-benzimidazole;
- 6-chloro-5-methoxy-2-(4-nitro-1H-pyrazol-3-yl)-1H-benzimidazole;
- 5-fluoro-6-methyl-2-(4-nitro-1H-pyrazol-3-yl)-1H-benzimidazole;
- 10 2-(4-nitro-1H-pyrazol-3-yl)-5-trifluoromethoxy-1H-benzimidazole;
- 2-(4-nitro-1H-pyrazol-3-yl)-5-trifluoromethyl-1H-benzimidazole;
- 5-chloro-6-methyl-2-(4-nitro-1H-pyrazol-3-yl)-1H-benzimidazole;
- 2-(4-nitro-1H-pyrazol-3-yl)-1H-benzimidazole-5-carboxylic acid methyl ester;
- 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid
- 15 isopropylamide;
- cyclopropyl-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-methanone;
- isopropyl-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-methanone;
- 20 1-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-2,2-dimethyl-propan-1-one;
- 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid methyl ester;
- 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-4,5,6,7-tetrahydro-1H-pyrazolo[4,3-c]pyridine;
- 25 3-(5-chloro-6-methyl-1H-benzimidazol-2-yl)-4,5,6,7-tetrahydro-1H-pyrazolo[4,3-c]pyridine;
- 3-[5-(2-morpholin-4-yl-ethoxy)-1H-benzimidazol-2-yl]-4,5,6,7-tetrahydro-1H-pyrazolo[4,3-c]pyridine;
- 3-(5-trifluoromethyl-1H-benzimidazol-2-yl)-4,5,6,7-tetrahydro-1H-pyrazolo[4,3-c]pyridine;
- 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid
- 30 *tert*-butyl ester;
- 5-methoxy-2-(4-nitro-1H-pyrazol-3-yl)-1H-benzimidazole;
- 5-ethoxy-2-(4-nitro-1H-pyrazol-3-yl)-1H-benzimidazole;
- 3-(5-chloro-6-methyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid *tert*-butyl ester;
- 35 3-[5-(2-morpholin-4-yl-ethoxy)-1H-benzimidazol-2-yl]-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid *tert*-butyl ester;

- 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrano[4,3-c]pyrazole;  
3-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid tert-butyl ester;  
N-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-2-morpholin-4-yl-acetamide;  
5 2-dimethylamino-N-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-acetamide;  
N-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-2-(1H-1,2,3,4-tetraazol-1-yl)-acetamide;  
N-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-isonicotinamide;  
2-cyclopropyl-N-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-acetamide;  
1-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-methyl-urea;  
10 1-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-isopropyl-urea;  
1-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-phenyl-urea;  
1-benzyl-3-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-urea;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid isopropylamide;  
15 cyclopropanecarboxylic acid[3-(5-ethoxy-6-ethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]amide;  
3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1H-pyrazol-4-ylamine;  
4-methylpiperazine-1-carboxylic acid [3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1H-pyrazol-4-yl]amide;  
1,1-dimethyl-3-[3-(1,5,6,7-tetrahydro-s-indacen-2-yl)-1H-pyrazol-4-yl]urea;  
20 cyclopropanecarboxylic acid [3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]amide;  
tetrahydropyran-4-carboxylic acid [3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]amide;  
morpholine-4-carboxylic acid[3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]amide;  
piperidine-4-carboxylic acid[3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]amide;  
25 3-[6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-diethylurea;  
5-methoxy-2-(4-nitro-1H-pyrazol-3-yl)-1H-benzoimidazole;  
morpholine-4-carboxylic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-ylmethyl]-amide;  
3-[3-(5-difluoromethoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-diethyl-urea;  
30 piperidine-1-carboxylic acid [3-(5-difluoromethoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
cyclopropanecarboxylic acid [3-(6-chloro-5-methoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
cyclopropanecarboxylic acid [3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1H-pyrazol-4-yl]amide;  
morpholine-4-carboxylic acid[3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1H-pyrazol-4-yl]-amide;  
piperidine-1-carboxylic acid [3-(5-methoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
35 3-[3-(5-methoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-dimethyl-urea;  
piperidine-1-carboxylic acid [3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;

- 3-[3-(5-fluoro-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-dimethyl-urea;  
morpholine-4-carboxylic acid [3-(5-trifluoromethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid  
diethylamide;
- 5 [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-pyrrolidin-1-yl-methanone;  
[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-piperidin-1-yl-methanone;  
[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-morpholin-4-yl-methanone;
- 10 3-(5-chloro-6-methyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid diethylamide;  
morpholine-4-carboxylic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
piperidine-1-carboxylic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;
- 15 3-[5-(2-morpholin-4-yl-ethoxy)-1H-benzimidazol-2-yl]-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid diethylamide;  
3-(5-trifluoromethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid diethylamide;  
2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid [2-(2H-tetrazol-5-yl)-ethyl]-amide;
- 20 1-cyclopropyl-3-[3-(5-ethyl-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-urea;  
1-[3-(5-ethyl-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-3-methyl-urea;  
4-methyl-piperazine-1-carboxylic acid [3-(5-ethyl-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
piperidine-1-carboxylic acid [3-(5-fluoro-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;
- 25 1-[3-(5-fluoro-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-3-methyl-urea;  
morpholine-4-carboxylic acid [3-(5-fluoro-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
4-methyl-piperazine-1-carboxylic acid [3-(5-fluoro-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
1-methyl-3-[3-(5-trifluoromethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-urea;
- 30 1-[3-(5-chloro-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-3-methyl-urea;  
4-methyl-piperazine-1-carboxylic acid [3-(5-chloro-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
1-tert-butyl-3-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-urea;  
1-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-3-ethyl-urea;
- 35 4-methyl-piperazine-1-carboxylic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;



- 1-cyclopropyl-3-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-urea;  
3-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-diethyl-urea;  
1-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-3-isobutyl-urea;  
1-cyclopropylmethyl-3-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-urea;
- 5 3-(5-chloro-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-ylamine;  
3-(5-ethyl-6-methyl-1H-benzimidazol-2-yl)-1H-indazole-5-carboxylic acid amide dihydrochloride;  
3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-indazole-5-carboxylic acid;  
2-(4-isobutrylamino-1H-pyrazol-3-yl)-1H-benzimidazole-5-carboxylic acid;  
3-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-dimethyl-urea;
- 10 3-(5-nitro-1H-benzimidazol-2-yl)-1H-indazole;  
2-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid (2-piperidin-1-yl-ethyl)-amide;  
2-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid (pyridin-2-ylmethyl)-amide;  
2-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid [3-(4-methyl-piperazin-1-yl)-propyl]-amide;  
N-[2-(1H-Indazol-3-yl)-1H-benzimidazol-5-yl]-isobutyramide;
- 15 N-[3-(5,6-Dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-2-piperidin-1-yl-acetamide;  
2-(1H-indazol-3-yl)-3H-benzimidazol-5-amine; or  
piperidine-1-carboxylic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide; or  
or an N-oxide, prodrug, acid bioisostere, pharmaceutically acceptable salt or solvate of such  
compound; or an N-oxide, prodrug, or acid bioisostere of such salt or solvate.
- 20
144. A compound according to claim 14 which is
- 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid benzylamide;  
2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-methylamide;  
2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-ethylamide;
- 25 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-isopropylamide;  
2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-phenylamide;  
2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-phenethylamide;  
5,6-dimethyl-2-(5-methylsulfanyl-1H-pyrazol-3-yl)-1H-benzimidazole;  
6-chloro-5-methyl-2-(5-methylsulfanyl-1H-pyrazol-3-yl)-1H-benzimidazole;
- 30 6-chloro-2-(5-ethylsulfanyl-1H-pyrazol-3-yl)-5-methyl-1H-benzimidazole;  
2-(5-methylsulfanyl-1H-pyrazol-3-yl)-5-trifluoromethyl-1H-benzimidazole;  
2-(5-cyclopropylmethylsulfanyl-1H-pyrazol-3-yl)-5,6-dimethyl-1H-benzimidazole;  
2-(5-ethylsulfanyl-1H-pyrazol-3-yl)-5,6-dimethyl-1H-benzimidazole;  
5,6-dimethyl-2-[5-(pyridin-3-ylmethylsulfanyl)-1H-pyrazol-3-yl]-1H-benzimidazole;
- 35 5-fluoro-2-[5-methylsulfanyl-1H-pyrazol-3-yl]-1H-benzimidazole;  
5,6-dimethyl-2-(5-phenethylsulfanyl-1H-pyrazol-3-yl)-1H-benzimidazole;

- 4-methyl-2-(5-methylsulfanyl-1H-pyrazol-3-yl)-1H-benzimidazole;  
5,6-dimethyl-2-(5-benzylsulfanyl-1H-pyrazol-3-yl)-1H-benzimidazole;  
5,6-dimethyl-2-[5-(thiophen-2-ylmethylsulfanyl)-1H-pyrazol-3-yl]-1H-benzimidazole;  
2-(5-ethylsulfanyl-1H-pyrazol-3-yl)-5-methoxy-1H-benzimidazole hydrochloride;  
5 5-methyl-2-(5-methylsulfanyl-4-propyl-1H-pyrazol-3-yl)-1H-benzimidazole;  
2-(5-(4-methoxy-benzylsulfanyl)-4-propyl-1H-pyrazol-3-yl)-5-methyl-1H-benzimidazole;  
2-(5-benzylsulfanyl-4-isopropyl-1H-pyrazol-3-yl)-5-methyl-1H-benzimidazole;  
2-(5-methylsulfanyl-4-methyl-1H-pyrazol-3-yl)-5-methoxy-1H-benzimidazole;  
2-(5-methylsulfanyl-4-methyl-1H-pyrazol-3-yl)-5-methyl-1H-benzimidazole;  
10 3-(5-chloro-1H-benzimidazol-2-yl)-1H-pyrazol-4-ylamine;  
3-(5,6-dichloro-1H-benzimidazol-2-yl)-1H-pyrazol-4-ylamine;  
5,6-dimethyl-2-(4-phenyl-1H-pyrazol-3-yl)-1H-benzimidazole;  
3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1H-pyrazole-4-carboxylic acid cyclopropylamide;  
3-(5-methoxy-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isopropylamide;  
15 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid (2-methoxy-ethyl)-amide;  
3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid propylamide;  
3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid (tetrahydro-pyran-4-yl)-amide;  
3-(5-difluoromethoxy-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isopropylamide;  
3-(5-difluoromethoxy-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid cyclopropylamide;  
20 3-(6-ethyl-5-methoxy-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isopropylamide;  
2-(5-ethoxy-1H-pyrazol-3-yl)-1H-benzimidazole;  
(benzimidazol-2-yl)-5-methylthio-3-pyrazole;  
2-(5-isopropyl-1H-pyrazol-3-yl)-5,6-dimethyl-1H-benzimidazole;  
2-(5-ethyl-1H-pyrazol-3-yl)-5,6-dimethyl-1H-benzimidazole;  
25 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isopropylamide;  
3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid (2-hydroxy-1,1-dimethyl-ethyl)-amide;  
2-(4-isopropylcarbamoyl-1H-pyrazol-3-yl)-1H-benzimidazole-5-carboxylic acid (pyridin-3-ylmethyl)-amide;  
30 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-5-methyl-1H-pyrazole-4-carboxylic acid cyclopropylamide;  
2-(4-isopropylcarbamoyl-1H-pyrazol-3-yl)-1H-benzimidazole-5-carboxylic acid phenylmethyl-amide;  
3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isobutyl-amide;  
3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isopropylamide;  
3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid cyclopropylmethyl-amide;  
35 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-5-methyl-1H-pyrazole-4-carboxylic acid tert-butylamide;  
2-(4-isobutyrylamino-1H-pyrazol-3-yl)-1H-benzimidazole-5-carboxylic acid benzylamide;

- N-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-isobutyramide;  
N-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-3-methyl-butyramide;  
N-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-2-phenyl-acetamide;  
cyclopropanecarboxylic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
5 methoxyacetic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
cyclopentanecarboxylic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
trimethylacetic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
*tert*-butylacetic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
butanoic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
10 isoxazole-5-carboxylic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
S(+)-2-methylbutanoic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
cyclopropanecarboxylic acid [3-(5-ethyl-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
piperidine-1-carboxylic acid [3-(6-chloro-5-methoxy-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
3-[3-(6-chloro-5-methoxy-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-dimethylurea;  
15 cyclopropanecarboxylic acid [3-(5-methoxy-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
cyclopropanecarboxylic acid [3-(5-ethoxy-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
cyclopropanecarboxylic acid [3-(5-fluoro-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
cyclopropanecarboxylic acid [3-(5-trifluoromethoxy-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
cyclopropanecarboxylic acid [3-(5-trifluoromethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
20 N-[3-(5-trifluoromethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-isobutyramide;  
cyclopropanecarboxylic acid [3-(5-chloro-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
3,5-dimethyl-isoxazole-4-carboxylic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
N-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-acetamide;  
25 furan-3-carboxylic acid [3-(5-chloro-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
N-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-4-methyl-benzamide;  
N-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-2-morpholin-4-yl-acetamide;  
2-dimethylamino-N-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-acetamide;  
N-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-2-(1H-1,2,3,4-tetraazol-1-yl)-acetamide;  
30 N-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-isonicotinamide;  
2-cyclopropyl-N-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-acetamide;  
1-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-3-methyl-urea;  
1-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-3-isopropyl-urea;  
1-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-3-phenyl-urea;  
35 1-benzyl-3-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-urea;  
cyclopropanecarboxylic acid [3-(5-ethoxy-6-ethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]amide;

- 4-methylpiperazine-1-carboxylic acid [3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1H-pyrazol-4-yl]amide;  
1,1-dimethyl-3-[3-(1,5,6,7-tetrahydro-s-indacen-2-yl)-1H-pyrazol-4-yl]urea;  
cyclopropanecarboxylic acid [3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]amide;  
5 tetrahydropyran-4-carboxylic acid [3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1H-pyrazole-4-yl]amide;  
morpholine-4-carboxylic acid[3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]amide;  
piperidine-4-carboxylic acid[3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]amide;  
3-[6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-diethylurea;  
10 morpholine-4-carboxylic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-ylmethyl]-amide;  
3-[3-(5-difluoromethoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-diethyl-urea;  
piperidine-1-carboxylic acid [3-(5-difluoromethoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
cyclopropanecarboxylic acid [3-(6-chloro-5-methoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
15 cyclopropanecarboxylic acid [3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1H-pyrazol-4-yl]amide;  
morpholine-4-carboxylic acid[3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1H-pyrazol-4-yl]-amide;  
piperidine-1-carboxylic acid [3-(5-methoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
3-[3-(5-methoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-dimethyl-urea;  
piperidine-1-carboxylic acid [3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
20 3-[3-(5-fluoro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-dimethyl-urea;  
morpholine-4-carboxylic acid [3-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
morpholine-4-carboxylic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
piperidine-1-carboxylic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
1-cyclopropyl-3-[3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-urea;  
25 1-[3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-methyl-urea;  
4-methyl-piperazine-1-carboxylic acid [3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
piperidine-1-carboxylic acid [3-(5-fluoro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
1-[3-(5-fluoro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-methyl-urea;  
30 morpholine-4-carboxylic acid [3-(5-fluoro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
4-methyl-piperazine-1-carboxylic acid [3-(5-fluoro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
1-methyl-3-[3-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-urea;  
1-[3-(5-chloro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-methyl-urea;  
35 4-methyl-piperazine-1-carboxylic acid [3-(5-chloro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;

- 1-tert-butyl-3-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-urea;  
 1-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-3-ethyl-urea;  
 4-methyl-piperazine-1-carboxylic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;
- 5 1-cyclopropyl-3-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-urea;  
 3-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-diethyl-urea;  
 1-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-3-isobutyl-urea;  
 1-cyclopropylmethyl-3-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-urea;  
 3-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-dimethyl-urea;
- 10 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid (2-piperidin-1-yl-ethyl)-amide;  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid (pyridin-2-ylmethyl)-amide;  
 N-[2-(1H-indazol-3-yl)-1H-benzimidazol-5-yl]-isobutyramide;  
 N-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-2-piperidin-1-yl-acetamide;  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-morpholinoamide;
- 15 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-(N'-methylpiperazino)amide;  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-pyrrolidinoamide;  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-(isobutyl)amide;  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-(cyclohexylmethyl)amide;  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-(2-furfuryl)amide;
- 20 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-benzyl-N-methylamide;  
 methyl 2-(1H-indazol-3-yl)-3H-benzimidazole-5-carboxylate;  
 5,6-dimethyl-2-(1H-indazol-3-yl)-1H-benzimidazole;  
 2-(1H-indazol-3-yl)-3H-benzimidazole-4-carboxylic acid;  
 2-(5-ethoxy-2H-pyrazol-3-yl)-1H-benzimidazole-4-carboxylic acid;
- 25 5,6-dimethyl-2-(5-methyl-2H-pyrazol-3-yl)-1H-benzimidazole;  
 5,6-dimethyl-2-(5-thiophen-2-yl-2H-pyrazol-3-yl)-1H-benzimidazole;  
 2-(4-bromo-2H-pyrazol-3-yl)-5,6-dimethyl-1H-benzimidazole;  
 2-(5-ethyl-2H-pyrazol-3-yl)-5,6-dimethyl-1H-benzimidazole;  
 2-(5-ethyl-2H-pyrazol-3-yl)-4,5-ethylenedioxy-1H-benzimidazole;
- 30 2-(5-ethyl-2H-pyrazol-3-yl)-5-methoxy-1H-benzimidazole;  
 2-(5-ethyl-2H-pyrazol-3-yl)-4-hydroxy-1H-benzimidazole  
 2-(5-ethyl-2H-pyrazol-3-yl)-5-bromo-1H-benzimidazole; or  
 or an N-oxide, prodrug, acid bioisostere, pharmaceutically acceptable salt or solvate of such compound; or an N-oxide, prodrug, or acid bioisostere of such salt or solvate.

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145. A compound according to claim 14 which is

- 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid benzylamide;  
2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-methylamide;  
2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-ethylamide, Example 3;  
2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-isopropylamide;  
5 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-phenylamide;  
2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-phenethylamide;  
5,6-dimethyl-2-(5-methylsulfanyl-1H-pyrazol-3-yl)-1H-benzoimidazole;  
6-chloro-2-(5-methylsulfanyl-1H-pyrazol-3-yl)-5-methyl-1H-benzoimidazole;  
6-chloro-2-(5-ethylsulfanyl-1H-pyrazol-3-yl)-5-methyl-1H-benzoimidazole;  
10 2-(5-methylsulfanyl-1H-pyrazol-3-yl)-5-trifluoromethyl-1H-benzoimidazole;  
2-(5-cyclopropylmethylsulfanyl-1H-pyrazol-3-yl)-5,6-dimethyl-1H-benzoimidazole;  
2-(5-ethylsulfanyl-1H-pyrazol-3-yl)-5,6-dimethyl-1H-benzoimidazole;  
3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1H-pyrazole-4-carboxylic acid cyclopropylamide;  
3-(5-methoxy-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isopropylamide;  
15 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid (2-methoxy-ethyl)-amide;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid propylamide;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid (tetrahydro-pyran-4-yl)-amide;  
3-(5-difluoromethoxy-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isopropylamide;  
3-(5-difluoromethoxy-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid cyclopropylamide;  
20 3-(6-ethyl-5-methoxy-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isopropylamide;  
2-(5-isopropyl-1H-pyrazol-3-yl)-5,6-dimethyl-1H-benzoimidazole;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isopropylamide;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid (2-hydroxy-1,1-dimethyl-ethyl)-amide;  
25 2-(4-isopropylcarbamoyl-1H-pyrazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (pyridin-3-ylmethyl)-amide;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-5-methyl-1H-pyrazole-4-carboxylic acid cyclopropylamide;  
2-(4-isopropylcarbamoyl-1H-pyrazol-3-yl)-1H-benzoimidazole-5-carboxylic acid phenylmethyl-amide, (compound denoted as A17-B106);  
30 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isobutyl-amide;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isopropylamide;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazole-4-carboxylic acid cyclopropylmethyl-amide;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-5-methyl-1H-pyrazole-4-carboxylic acid tert-butylamide;  
2-(4-isobutyrylamino-1H-pyrazol-3-yl)-1H-benzoimidazole-5-carboxylic acid benzylamide;  
35 N-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-isobutyramide;  
N-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-methyl-butyramide;

- N-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-2-phenyl-acetamide;  
cyclopropanecarboxylic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
methoxyacetic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
cyclopentanecarboxylic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
5 trimethylacetic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
*tert*-butylacetic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
butanoic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
isoxazole-5-carboxylic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
S(+)-2-methylbutanoic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
10 cyclopropanecarboxylic acid [3-(5-ethyl-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
piperidine-1-carboxylic acid [3-(6-chloro-5-methoxy-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
3-[3-(6-chloro-5-methoxy-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-dimethylurea;  
cyclopropanecarboxylic acid [3-(5-methoxy-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
cyclopropanecarboxylic acid [3-(5-ethoxy-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
15 cyclopropanecarboxylic acid [3-(5-fluoro-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
cyclopropanecarboxylic acid [3-(5-trifluoromethoxy-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
cyclopropanecarboxylic acid [3-(5-trifluoromethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
N-[3-(5-trifluoromethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-isobutyramide;  
cyclopropanecarboxylic acid [3-(5-chloro-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
20 3,5-dimethyl-isoxazole-4-carboxylic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
N-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-acetamide;  
furan-3-carboxylic acid [3-(5-chloro-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
N-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-4-methyl-benzamide;  
25 N-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-2-morpholin-4-yl-acetamide;  
N-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-2-(1H-1,2,3,4-tetraazol-1-yl)-acetamide;  
N-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-isonicotinamide;  
2-cyclopropyl-N-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-acetamide;  
1-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-3-methyl-urea;  
30 1-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-3-isopropyl-urea;  
1-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-3-phenyl-urea;  
1-benzyl-3-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-urea;  
cyclopropanecarboxylic acid [3-(5-ethoxy-6-ethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]amide;  
4-methylpiperazine-1-carboxylic acid [3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1H-pyrazol-4-yl]amide;  
35 1,1-dimethyl-3-[3-(1,5,6,7-tetrahydro-s-indacen-2-yl)-1H-pyrazol-4-yl]urea;

- cyclopropanecarboxylic acid [3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]amide;  
tetrahydropyran-4-carboxylic acid [3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1H-pyrazole-4-yl]amide;  
morpholine-4-carboxylic acid[3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]amide;
- 5 piperidine-4-carboxylic acid[3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]amide;  
3-[6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-diethylurea;  
morpholine-4-carboxylic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-ylmethyl]-amide;
- 3-[3-(5-difluoromethoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-diethyl-urea, Example 257(h);
- 10 piperidine-1-carboxylic acid [3-(5-difluoromethoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
cyclopropanecarboxylic acid [3-(6-chloro-5-methoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
cyclopropanecarboxylic acid [3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1H-pyrazol-4-yl]amide;  
morpholine-4-carboxylic acid[3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1H-pyrazol-4-yl]-amide;  
piperidine-1-carboxylic acid [3-(5-methoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;
- 15 3-[3-(5-methoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-dimethyl-urea;  
piperidine-1-carboxylic acid [3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
3-[3-(5-fluoro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-dimethyl-urea;  
morpholine-4-carboxylic acid [3-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
morpholine-4-carboxylic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;
- 20 piperidine-1-carboxylic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
1-cyclopropyl-3-[3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-urea;  
1-[3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-methyl-urea;  
4-methyl-piperazine-1-carboxylic acid [3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;
- 25 piperidine-1-carboxylic acid [3-(5-fluoro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
1-[3-(5-fluoro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-methyl-urea;  
morpholine-4-carboxylic acid [3-(5-fluoro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
4-methyl-piperazine-1-carboxylic acid [3-(5-fluoro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;
- 30 1-methyl-3-[3-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-urea;  
1-[3-(5-chloro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-methyl-urea;  
4-methyl-piperazine-1-carboxylic acid [3-(5-chloro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;
- 1-tert-butyl-3-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-urea;
- 35 1-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-ethyl-urea;



- 4-methyl-piperazine-1-carboxylic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;
- 1-cyclopropyl-3-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-urea;
- 3-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-diethyl-urea;
- 5 1-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-3-isobutyl-urea;
- 1-cyclopropylmethyl-3-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-urea;
- 3-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-dimethyl-urea;
- 2-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid (2-piperidin-1-yl-ethyl)-amide;
- 2-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid (pyridin-2-ylmethyl)-amide; or
- 10 N-[3-(5,6-Dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-2-piperidin-1-yl-acetamide, or an N-oxide, prodrug, acid bioisostere, pharmaceutically acceptable salt or solvate of such compound; or an N-oxide, prodrug, or acid bioisostere of such salt or solvate.
146. A compound according to claim 14 which is
- 15 3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1H-pyrazole-4-carboxylic acid cyclopropylamide;
- 3-(5-methoxy-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isopropylamide;
- 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid (2-methoxy-ethyl)-amide;
- 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid propylamide;
- 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid (tetrahydro-pyran-4-yl)-amide;
- 20 3-(5-difluoromethoxy-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isopropylamide;
- 3-(5-difluoromethoxy-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid cyclopropylamide;
- 3-(6-ethyl-5-methoxy-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isopropylamide;
- 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isopropylamide;
- 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid (2-hydroxy-1,1-dimethyl-
- 25 ethyl)-amide;
- 2-(4-isopropylcarbamoyl-1H-pyrazol-3-yl)-1H-benzimidazole-5-carboxylic acid (pyridin-3-ylmethyl)-amide;
- 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-5-methyl-1H-pyrazole-4-carboxylic acid cyclopropylamide;
- 2-(4-isopropylcarbamoyl-1H-pyrazol-3-yl)-1H-benzimidazole-5-carboxylic acid phenylmethyl-amide;
- 30 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isobutyl-amide;
- 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isopropylamide;
- 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid cyclopropylmethyl-amide;
- 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-5-methyl-1H-pyrazole-4-carboxylic acid tert-butylamide;
- 2-(4-isobutyrylamino-1H-pyrazol-3-yl)-1H-benzimidazole-5-carboxylic acid benzylamide;
- 35 N-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-isobutyramide;
- N-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-3-methyl-butyramide;

- cyclopropanecarboxylic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
methoxyacetic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
cyclopentanecarboxylic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
trimethylacetic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;
- 5 *tert*-butylacetic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
butanoic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
isoxazole-5-carboxylic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
S(+)-2-methylbutanoic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
cyclopropanecarboxylic acid [3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;
- 10 piperidine-1-carboxylic acid[3-(6-chloro-5-methoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
3-[3-(6-chloro-5-methoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-dimethylurea;  
cyclopropanecarboxylic acid [3-(5-methoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
cyclopropanecarboxylic acid [3-(5-ethoxy-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
cyclopropanecarboxylic acid [3-(5-fluoro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;
- 15 cyclopropanecarboxylic acid [3-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
N-[3-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-isobutyramide;  
cyclopropanecarboxylic acid [3-(5-chloro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
3,5-dimethyl-isoxazole-4-carboxylic acid [3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;
- 20 furan-3-carboxylic acid [3-(5-chloro-6-methyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
N-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-2-morpholin-4-yl-acetamide;  
N-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-2-(1H-1,2,3,4-tetraazol-1-yl)-acetamide;  
N-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-isonicotinamide;  
2-cyclopropyl-N-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-acetamide;
- 25 1-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-methyl-urea;  
1-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-isopropyl-urea;  
1-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-3-phenyl-urea;  
1-benzyl-3-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-urea;  
cyclopropanecarboxylic acid[3-(5-ethoxy-6-ethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]amide;
- 30 4-methylpiperazine-1-carboxylic acid [3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1H-pyrazol-4-yl]amide;  
1,1-dimethyl-3-[3-(1,5,6,7-tetrahydro-s-indacen-2-yl)-1H-pyrazol-4-yl]urea;  
cyclopropanecarboxylic acid [3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]amide;  
tetrahydropyran-4-carboxylic acid [3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]amide;
- 35 morpholine-4-carboxylic acid[3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]amide;

- piperidine-4-carboxylic acid[3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]amide;  
3-[6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-diethylurea;  
3-[3-(5-difluoromethoxy-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-diethyl-urea;  
piperidine-1-carboxylic acid [3-(5-difluoromethoxy-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
5 cyclopropanecarboxylic acid [3-(6-chloro-5-methoxy-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
cyclopropanecarboxylic acid [3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1H-pyrazol-4-yl]amide;  
morpholine-4-carboxylic acid[3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1H-pyrazol-4-yl]-amide;  
piperidine-1-carboxylic acid [3-(5-methoxy-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
3-[3-(5-methoxy-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-dimethyl-urea;  
10 piperidine-1-carboxylic acid [3-(5-ethyl-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
3-[3-(5-fluoro-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-dimethyl-urea;  
morpholine-4-carboxylic acid [3-(5-trifluoromethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
morpholine-4-carboxylic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
piperidine-1-carboxylic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
15 1-cyclopropyl-3-[3-(5-ethyl-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-urea;  
1-[3-(5-ethyl-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-3-methyl-urea;  
4-methyl-piperazine-1-carboxylic acid [3-(5-ethyl-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
piperidine-1-carboxylic acid [3-(5-fluoro-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
20 1-[3-(5-fluoro-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-3-methyl-urea;  
morpholine-4-carboxylic acid [3-(5-fluoro-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
1-methyl-3-[3-(5-trifluoromethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-urea;  
1-[3-(5-chloro-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-3-methyl-urea;  
4-methyl-piperazine-1-carboxylic acid [3-(5-chloro-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
25 1-tert-butyl-3-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-urea;  
1-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-3-ethyl-urea;  
4-methyl-piperazine-1-carboxylic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
30 1-cyclopropyl-3-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-urea;  
3-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-diethyl-urea;  
1-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-3-isobutyl-urea;  
1-cyclopropylmethyl-3-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-urea; or  
3-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-dimethyl-urea; or  
35 an N-oxide, prodrug, acid bioisostere, pharmaceutically acceptable salt or solvate of such compound;  
or an N-oxide, prodrug, or acid bioisostere of such salt or solvate.

147. A compound according to claim 14 which is

- 3-(5-methoxy-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isopropylamide;  
 3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1H-pyrazole-4-carboxylic acid cyclopropylamide;  
 5 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid (tetrahydro-pyran-4-yl)-amide;  
 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazole-4-carboxylic acid isobutyl-amide;  
 cyclopropanecarboxylic acid[3-(5-ethoxy-6-ethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]amide;  
 1,1-dimethyl-3-[3-(1,5,6,7-tetrahydro-s-indacen-2-yl)-1H-pyrazol-4-yl]urea;  
 piperidine-4-carboxylic acid[3-(6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]amide;  
 10 3-[6-ethoxy-5-fluoro-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-diethylurea;  
 3-[3-(5-difluoromethoxy-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-diethyl-urea;  
 piperidine-1-carboxylic acid [3-(5-difluoromethoxy-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
 cyclopropanecarboxylic acid [3-(1,5,6,7-tetrahydro-1,3-diaza-s-indacen-2-yl)-1H-pyrazol-4-yl]amide;  
 piperidine-1-carboxylic acid [3-(5-methoxy-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
 15 piperidine-1-carboxylic acid [3-(5-ethyl-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
 piperidine-1-carboxylic acid [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
 1-cyclopropyl-3-[3-(5-ethyl-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-urea;  
 piperidine-1-carboxylic acid [3-(5-fluoro-6-methyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-amide;  
 1-tert-butyl-3-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-urea;  
 20 1-cyclopropyl-3-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-urea;  
 3-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-diethyl-urea;  
 1-cyclopropylmethyl-3-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-urea; or  
 3-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-pyrazol-4-yl]-1,1-dimethyl-urea;  
 or an N-oxide, prodrug, acid bioisostere, pharmaceutically acceptable salt or solvate of such  
 25 compound; or an N-oxide, prodrug, or acid bioisostere of such salt or solvate.

148. A compound according to claim 54 which is

- 3-(1H-benzimidazol-2-yl)-1H-indazole;  
 3-(5-methoxy-1H-benzimidazol-2-yl)-1H-indazole;  
 30 [2-(indazol-3-yl)-1H-benzimidazol-5-yl]-phenyl-methanone;  
 2-(1H-indazol-3-yl)-3H-benzimidazol-4-ol;  
 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-indazole;  
 2-(1H-indazol-3-yl)-3H-imidazo[4,5-c]pyridine;  
 2-(1H-indazole-3-yl)-3H-imidazo[4,5-b]pyridine;  
 35 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-5-methoxy-1H-indazole;  
 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-5-fluoro-1H-indazole;

- 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-6-fluoro-1H-indazole;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-5-methyl-1H-indazole;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-6-methoxy-1H-indazole;  
3-(5-ethyl-1H-benzoimidazol-2-yl)-1H-indazole;  
5 3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-indazole;  
3-(5-isopropyl-6-methyl-1H-benzoimidazol-2-yl)-1H-indazole;  
3-(5-bromo-6-methyl-1H-benzoimidazol-2-yl)-1H-indazole;  
3-(5-bromo-1H-benzoimidazol-2-yl)-1H-indazole;  
3-(5-(3-cyano)phenyl-1H-benzoimidazol-2-yl)-1H-indazole;  
10 3-(5-(pyrid-3-yl)-1H-benzoimidazol-2-yl)-1H-indazole;  
3-(6-methyl-5-phenyl-1H-benzoimidazol-2-yl)-1H-indazole;  
3-(5-phenyl-1H-benzoimidazol-2-yl)-1H-indazole;  
3-(5-(2-fluoro)phenyl-1H-benzoimidazol-2-yl)-1H-indazole;  
3-(5-(5,6-methylenedioxy)phenyl-1H-benzoimidazol-2-yl)-1H-indazole;  
15 3-(5-(2-methoxy)phenyl-1H-benzoimidazol-2-yl)-1H-indazole;  
3-(5-(4-chloro)phenyl-1H-benzoimidazol-2-yl)-1H-indazole;  
3-(5-(4-methyl)phenyl-1H-benzoimidazol-2-yl)-1H-indazole;  
3-(5-benzyloxy-1H-benzoimidazol-2-yl)-1H-indazole;  
3-(5,6-methylenedioxy-1H-benzoimidazol-2-yl)-1H-indazole;  
20 3-(5,6-dimethoxy-1H-benzoimidazol-2-yl)-1H-indazole;  
3-(5,6-diethyl-1H-benzoimidazol-2-yl)-1H-indazole;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carbonitrile;  
3-(5-methoxycarbonyl-1H-benzoimidazol-2-yl)-1H-indazole;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-5-ethoxy-1H-indazole;  
25 3-[5-(2-morpholin-4-yl-ethoxy)-1H-benzoimidazol-2-yl]-1H-indazole;  
3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-indazole-5-carbonitrile;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-indazole-5-carbonitrile;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-4-fluoro-1H-indazole;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-5-chloro-1H-indazole;  
30 3-(5-n-propyl-1H-benzoimidazol-2-yl)-1H-indazole;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-sulfonic acid benzylamide;  
3-(5-methanesulfonyl-1H-benzoimidazol-2-yl)-1H-indazole;  
[2-(indazol-3-yl)-1H-benzoimidazol-5-yl]-phenyl-methanol;  
[2-(indazol-3-yl)-1H-benzoimidazol-5-yl]-carboxylic acid;  
35 [2-(indazol-3-yl)-1H-benzoimidazol-5-yl]-carboxylic acid, methylamide;  
[2-(indazol-3-yl)-1H-benzoimidazol-5-yl]-carboxylic acid, dimethylamide;

- [2-(indazol-3-yl)-1H-benzimidazol-5-yl]-carboxylic acid, isopropylamide;  
 [2-(indazol-3-yl)-1H-benzimidazol-5-yl]-carboxylic acid, benzylamide;  
 [2-(indazol-3-yl)-1H-benzimidazol-5-yl]-carboxylic acid, benzamide;  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid (pyridin-3-ylmethyl)-amide;  
 5 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid 3-methyl-benzylamide;  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid 4-methyl-benzylamide;  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid [3-(2-oxo-pyrrolidin-1-yl)-propyl]-amide;  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid (2-morpholin-4-yl-ethyl)-amide;  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid (2-methoxy-ethyl)-amide;  
 10 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid (2-cyano-ethyl)-amide;  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid (2-hydroxy-1,1-dimethyl-ethyl)-amide;  
 2-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid (3-imidazol-1-yl-propyl)-amide;  
 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-indazole-5-carboxylic acid dimethylamide;  
 [2-(indazol-3-yl)-1H-benzimidazol-5-yl]-carboxylic acid; or  
 15 or an N-oxide, prodrug, acid bioisostere, pharmaceutically acceptable salt or solvate of such compound; or an N-oxide, prodrug, or acid bioisostere of such salt or solvate.

149. A compound according to claim 54 which is

- 3-(1H-benzimidazol-2-yl)-1H-indazole;  
 20 3-(5-methoxy-1H-benzimidazol-2-yl)-1H-indazole;  
 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-indazole;  
 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-5-methoxy-1H-indazole;  
 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-5-fluoro-1H-indazole;  
 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-6-fluoro-1H-indazole;  
 25 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-5-methyl-1H-indazole;  
 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-6-methoxy-1H-indazole;  
 3-(5-ethyl-1H-benzimidazol-2-yl)-1H-indazole;  
 3-(5-ethyl-6-methyl-1H-benzimidazol-2-yl)-1H-indazole;  
 3-(5-isopropyl-6-methyl-1H-benzimidazol-2-yl)-1H-indazole;  
 30 3-(5-bromo-6-methyl-1H-benzimidazol-2-yl)-1H-indazole;  
 3-(5-bromo-1H-benzimidazol-2-yl)-1H-indazole;  
 3-(5-(3-cyano)phenyl-1H-benzimidazol-2-yl)-1H-indazole;  
 3-(5-(pyrid-3-yl)-1H-benzimidazol-2-yl)-1H-indazole;  
 3-(6-methyl-5-phenyl-1H-benzimidazol-2-yl)-1H-indazole;  
 35 3-(5-phenyl-1H-benzimidazol-2-yl)-1H-indazole, (compound denoted as A60-B63), Example 235(q);  
 3-(5-(2-fluoro)phenyl-1H-benzimidazol-2-yl)-1H-indazole;

- 3-(5-(3,4 -methylenedioxy)phenyl-1H-benzimidazol-2-yl)-1H-indazole;  
3-(5-benzyloxy-1H-benzimidazol-2-yl)-1H-indazole;  
3-(5,6-methylenedioxy-1H-benzimidazol-2-yl)-1H-indazole;  
3-(5,6-dimethoxy-1H-benzimidazol-2-yl)-1H-indazole;  
5 3-(5,6-diethyl-1H-benzimidazol-2-yl)-1H-indazole;  
2-(1H-indazol-3-yl)-1H-benzimidazole-5-carbonitrile;  
3-(5-methoxycarbonyl-1H-benzimidazol-2-yl)-1H-indazole;  
3-(5,6-dimethyl-1H-benzimidazol-2-yl)-5-ethoxy-1H-indazole;  
3-[5-(2-morpholin-4-yl-ethoxy)-1H-benzimidazol-2-yl]-1H-indazole;  
10 3-(5-ethyl-6-methyl-1H-benzimidazol-2-yl)-1H-indazole-5-carbonitrile;  
3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-indazole-5-carbonitrile;  
3-(5,6-dimethyl-1H-benzimidazol-2-yl)-4-fluoro-1H-indazole;  
3-(5,6-dimethyl-1H-benzimidazol-2-yl)-5-chloro-1H-indazole;  
3-(5-n-propyl-1H-benzimidazol-2-yl)-1H-indazole;  
15 2-(1H-indazol-3-yl)-1H-benzimidazole-5-sulfonic acid benzylamide;  
3-(5-methanesulfonyl-1H-benzimidazol-2-yl)-1H-indazole;  
[2-(indazol-3-yl)-1H-benzimidazol-5-yl]-phenyl-methanol;  
[2-(indazol-3-yl)-1H-benzimidazol-5-yl]-carboxylic acid, ethylamide;  
[2-(indazol-3-yl)-1H-benzimidazol-5-yl]-carboxylic acid, methylamide;  
20 [2-(indazol-3-yl)-1H-benzimidazol-5-yl]-carboxylic acid, isopropylamide;  
[2-(indazol-3-yl)-1H-benzimidazol-5-yl]-carboxylic acid, benzylamide;  
[2-(indazol-3-yl)-1H-benzimidazol-5-yl]-carboxylic acid, benzamide;  
2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid (pyridin-3-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid 3-methyl-benzylamide;  
25 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid 4-methyl-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid [3-(2-oxo-pyrrolidin-1-yl)-propyl]-amide;  
2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid (2-morpholin-4-yl-ethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid (2-methoxy-ethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid (2-cyano-ethyl)-amide;  
30 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid (2-hydroxy-1,1-dimethyl-ethyl)-amide;  
2-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid (3-imidazol-1-yl-propyl)-amide;  
3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1H-indazole-5-carboxylic acid dimethylamide;  
[2-(indazol-3-yl)-1H-benzimidazol-5-yl]-carboxylic acid;  
3-(5-ethyl-6-methyl-1H-benzimidazol-2-yl)-1H-indazole-5-carboxylic acid amide dihydrochloride;  
35 or an N-oxide, prodrug, acid bioisostere, pharmaceutically acceptable salt or solvate of such compound; or an N-oxide, prodrug, or acid bioisostere of such salt or solvate.

150. A compound according to claim 54 which is  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-5-methoxy-1H-indazole;  
3-(5-ethyl-6-methyl-1H-benzoimidazol-2-yl)-1H-indazole; or  
5 3-(5,6-diethyl-1H-benzoimidazol-2-yl)-1H-indazole;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1H-indazole-5-carboxylic acid dimethylamide;  
or an N-oxide, prodrug, acid bioisostere, pharmaceutically acceptable salt or solvate of such  
compound; or an N-oxide, prodrug, or acid bioisostere of such salt or solvate.
- 10 151. A compound according to claim 89 which is  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-4,5,6,7-tetrahydro-1H-indazole;  
5,6-dimethyl-2-(1,4,5,6-tetrahydro-cyclopentapyrazol-3-yl)-1H-benzoimidazole;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1,4,5,6,7,8-hexahydro-cycloheptapyrazole; or  
or an N-oxide, prodrug, acid bioisostere, pharmaceutically acceptable salt or solvate of such  
15 compound; or an N-oxide, prodrug, or acid bioisostere of such salt or solvate.
152. A compound according to claim 89 which is  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-4,5,6,7-tetrahydro-1H-indazole; or  
5,6-dimethyl-2-(1,4,5,6-tetrahydro-cyclopentapyrazol-3-yl)-1H-benzoimidazole; or  
20 an N-oxide, prodrug, acid bioisostere, pharmaceutically acceptable salt or solvate of such compound;  
or an N-oxide, prodrug, or acid bioisostere of such salt or solvate.
153. A compound according to claim 110 which is  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid  
25 isopropylamide;  
cyclopropyl-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-  
methanone;  
isopropyl-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-  
methanone;  
30 1-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-ethanone;  
1-[3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-2-methyl-  
propan-1-one;  
3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid  
methyl ester;  
35 3-(5,6-dimethyl-1H-benzoimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid  
dimethylamide;



1-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-3-methylbutan-1-one;

1-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-2,2-dimethyl-propan-1-one;

5 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid methyl ester;

3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid isopropylamide;

3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid  
10 diethylamide;

[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-pyrrolidin-1-yl-methanone;

[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-piperidin-1-yl-methanone;

15 [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-morpholin-4-yl-methanone;

3-(5-chloro-6-methyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid diethylamide;

3-[5-(2-morpholin-4-yl-ethoxy)-1H-benzimidazol-2-yl]-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid diethylamide;

3-(5-trifluoromethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid diethylamide;

1-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-2,2-dimethyl-propan-1-one;

25 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-5-(propane-2-sulfonyl)-4,5,6,7-tetrahydro-1H-pyrazolo[4,3-c]pyridine; or

3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrano[4,3-c]pyrazole; or

an N-oxide, prodrug, acid bioisostere, pharmaceutically acceptable salt or solvate of such compound; or an N-oxide, prodrug, or acid bioisostere of such salt or solvate.

30

154. A compound according to claim 110 which is

3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid isopropylamide;

cyclopropyl-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-

35 methanone;

- isopropyl-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-methanone;
- 1-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-2,2-dimethyl-propan-1-one;
- 5 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid methyl ester;
- 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid isopropylamide;
- 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid
- 10 diethylamide;
- [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-pyrrolidin-1-yl-methanone;
- [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-piperidin-1-yl-methanone;
- 15 [3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-morpholin-4-yl-methanone;
- 3-(5-chloro-6-methyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid diethylamide;
- 3-[5-(2-morpholin-4-yl-ethoxy)-1H-benzimidazol-2-yl]-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-
- 20 carboxylic acid diethylamide;
- 3-(5-trifluoromethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid diethylamide;
- 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid dimethylamide;
- 25 1-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-2-methyl-propan-1-one;
- 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid methyl ester;
- 1-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-3-methyl-
- 30 butan-1-one; or
- 1-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-2,2-dimethyl-propan-1-one; or
- or an N-oxide, prodrug, acid bioisostere, pharmaceutically acceptable salt or solvate of such
- 35 compound; or an N-oxide, prodrug, or acid bioisostere of such salt or solvate.

155. A compound according to claim 110 which is

3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid isopropylamide;

cyclopropyl-[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-methanone;

3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid isopropylamide;

prepared 3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid diethylamide;

[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-pyrrolidin-1-yl-methanone;

[3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridin-5-yl]-piperidin-1-yl-methanone;

3-(5-chloro-6-methyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid diethylamide; or

3-(5,6-dimethyl-1H-benzimidazol-2-yl)-1,4,6,7-tetrahydro-pyrazolo[4,3-c]pyridine-5-carboxylic acid dimethylamide;

or an N-oxide, prodrug, acid bioisostere, pharmaceutically acceptable salt or solvate of such compound; or an N-oxide, prodrug, or acid bioisostere of such salt or solvate.

156. A compound according to claim 3 which is

2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid benzylamide;

2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-methylamide;

2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-ethylamide;

2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-isopropylamide;

2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-phenylamide;

2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-phenethylamide;

2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-morpholinoamide;

2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-(N'-methylpiperazino)amide;

2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-pyrrolidinoamide;

2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-(isobutyl)amide;

2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-(cyclohexylmethyl)amide;

2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-(2-furfuryl)amide;

2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-benzyl-N-methylamide;

methyl 2-(1H-indazol-3-yl)-3H-benzimidazole-5-carboxylate;

5,6-dimethyl-2-(1H-indazol-3-yl)-1H-benzimidazole;

- 5-methoxy-2-(1H-indazol-3-yl)-1H-benzimidazole;  
2-(1H-indazol-3-yl)-3H-benzimidazole-4-carboxylic acid;  
5-bromo 2-(1H-indazol-3-yl)-3H-benzimidazole;  
2-(5-ethoxy-2H-pyrazol-3-yl)-1H-benzimidazole-4-carboxylic acid;  
5 5,6-dimethyl-2-(5-methyl-2H-pyrazol-3-yl)-1H-benzimidazole;  
5,6-dimethyl-2-(5-thiophen-2-yl-2H-pyrazol-3-yl)-1H-benzimidazole;  
2-(4-bromo-2H-pyrazol-3-yl)-5,6-dimethyl-1H-benzimidazole;  
2-(5-ethyl-2H-pyrazol-3-yl)-5,6-dimethyl-1H-benzimidazole;  
2-(5-ethyl-2H-pyrazol-3-yl)-4,5-ethylenedioxy-1H-benzimidazole;  
10 2-(5-ethyl-2H-pyrazol-3-yl)-5-methoxy-1H-benzimidazole;  
2-(5-ethyl-2H-pyrazol-3-yl)-4-hydroxy-1H-benzimidazole  
2-(5-ethyl-2H-pyrazol-3-yl)-5-bromo-1H-benzimidazole;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 2,4-dichloro-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (3-ethoxy-propyl)-amide;  
15 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-bromo-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-methanesulfonyl-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (naphthalen-1-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-trifluoromethyl-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (thiophen-2-ylmethyl)-amide;  
20 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-dimethylamino-benzylamide;  
4-({[2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carbonyl]-amino}-methyl)-piperidine-1-carboxylic  
acid tert-butyl ester;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-nitro-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (pyridin-3-ylmethyl)-amide;  
25 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 3-bromo-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 3-methoxy-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (benzo[1,3]dioxol-5-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (benzo[b]thiophen-3-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (1,3-dimethyl-1H-pyrazol-4-ylmethyl)-  
30 amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 2-trifluoromethoxy-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 2-methyl-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (3-methyl-thiophen-2-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 2-trifluoromethyl-benzylamide;  
35 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-phenoxy-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 3-trifluoromethoxy-benzylamide;

- 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (3-isopropoxy-propyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (1-methyl-1H-pyrazol-4-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-isopropyl-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2,5-dimethyl-furan-3-ylmethyl)-amide;  
5 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (benzo[b]thiophen-2-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid [3-(3-acetylamino-phenoxy)-propyl]-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (6-chloro-pyridin-3-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid ([2,2']bithiophenyl-5-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2,3-dihydro-benzofuran-5-ylmethyl)-  
10 amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-cyano-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (5-chloro-benzo[b]thiophen-3-ylmethyl)-  
amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 3-trifluoromethyl-benzylamide;  
15 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 2-methylsulfanyl-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (benzo[b]thiophen-3-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (tetrahydro-pyran-4-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2,3-dihydro-benzo[1,4]dioxin-2-ylmethyl)-  
amide;  
20 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (furan-3-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 2-nitro-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (thiophen-3-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 3,5-dimethyl-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (1-methyl-1H-benzoimidazol-2-ylmethyl)-  
25 amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 3-methyl-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 3-chloro-benzylamide;  
2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid 4-sulfamoyl-benzylamide;  
2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid (3-ethoxy-propyl)-amide;  
30 2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid 4-bromo-benzylamide;  
2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid (naphthalen-1-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid (thiophen-2-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid 4-dimethylamino-benzylamide;  
2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid 4-nitro-benzylamide;  
35 2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid (pyridin-3-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid 3-bromo-benzylamide;

- 2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid 3-methoxy-benzylamide;  
2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid (benzo[b]thiophen-3-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid 4-phenoxy-benzylamide;  
2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid 3-trifluoromethoxy-benzylamide;  
5 2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid (6-chloro-pyridin-3-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid (2,3-dihydro-benzofuran-5-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid 3-trifluoromethyl-benzylamide;  
2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid 2-methylsulfanyl-benzylamide;  
10 2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid (furan-3-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid 2-nitro-benzylamide;  
2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid 3,5-dimethyl-benzylamide;  
2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid 3-chloro-benzylamide;  
2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid phenylamide;  
15 2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid benzylamide;  
2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid phenethyl-amide;  
3-(6-phenyl-1H-benzoimidazol-2-yl)-2H-indazole;  
3-[6-(2,4-dichloro-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
3-(6-naphthalen-1-yl-1H-benzoimidazol-2-yl)-2H-indazole;  
20 3-[6-(4-fluoro-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
3-[6-(4-chloro-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
3-[6-(4-methoxy-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
3-[6-(3-chloro-4-fluoro-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
3-[6-(3,5-dichloro-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
25 3-(6-thianthren-1-yl-1H-benzoimidazol-2-yl)-2H-indazole;  
3-(6-biphenyl-4-yl-1H-benzoimidazol-2-yl)-2H-indazole;  
3-(6-p-tolyl-1H-benzoimidazol-2-yl)-2H-indazole;  
3-(6-m-tolyl-1H-benzoimidazol-2-yl)-2H-indazole;  
3-(6-o-tolyl-1H-benzoimidazol-2-yl)-2H-indazole;  
30 3-(6-thiophen-3-yl-1H-benzoimidazol-2-yl)-2H-indazole;  
3-[6-(3-trifluoromethyl-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
3-[6-(4-trifluoromethyl-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
3-[6-(3-chloro-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
3-[6-(3-methoxy-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
35 3-[6-(3,5-dimethyl-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
3-[6-(3,4-dimethyl-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;

- 3-(6-benzo[1,3]dioxol-5-yl)-1H-benzoimidazol-2-yl)-2H-indazole;  
3-[6-(4-tert-butyl-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
3-(6-hex-1-enyl)-1H-benzoimidazol-2-yl)-2H-indazole;  
3-[6-(3,4-dimethoxy-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
5 3-[2-(2H-indazol-3-yl)-3H-benzoimidazol-5-yl]-phenol;  
4-[2-(2H-indazol-3-yl)-3H-benzoimidazol-5-yl]-phenol;  
3-[6-(3,4-dichloro-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
3-[6-(4-trifluoromethoxy-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
1-{4-[2-(2H-indazol-3-yl)-3H-benzoimidazol-5-yl]-phenyl}-ethanone;  
10 3-(6-benzo[b]thiophen-2-yl)-1H-benzoimidazol-2-yl)-2H-indazole;  
3-[6-(3,4,5-trimethoxy-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
1-{5-[2-(2H-indazol-3-yl)-3H-benzoimidazol-5-yl]-thiophen-2-yl}-ethanone;  
1-{3-[2-(2H-indazol-3-yl)-3H-benzoimidazol-5-yl]-phenyl}-ethanone;  
3-[6-(4-benzyloxy-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
15 3-[6-(2-fluoro-biphenyl-4-yl)-1H-benzoimidazol-2-yl]-2H-indazole;  
3-(6-benzo[b]thiophen-3-yl)-1H-benzoimidazol-2-yl)-2H-indazole;  
{3-[2-(2H-indazol-3-yl)-3H-benzoimidazol-5-yl]-phenyl}-methanol;  
3-[6-(4-ethylsulfanyl-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
3-[6-(2,4-difluoro-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
20 3-[6-(3-trifluoromethoxy-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
3-[6-(4-fluoro-2-methyl-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
3-{6-[2-(4-fluoro-phenyl)-vinyl]-1H-benzoimidazol-2-yl}-2H-indazole;  
3-{6-[2-(4-chloro-phenyl)-vinyl]-1H-benzoimidazol-2-yl}-2H-indazole;  
3-{4-[2-(2H-indazol-3-yl)-3H-benzoimidazol-5-yl]-phenyl}-propionic acid;  
25 {4-[2-(2H-indazol-3-yl)-3H-benzoimidazol-5-yl]-phenyl}-methanol;  
3-(6-furan-2-yl)-1H-benzoimidazol-2-yl)-2H-indazole;  
3-[6-(3-benzyloxy-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
3-[6-(4-isopropyl-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
3-[6-(4-methanesulfonyl-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
30 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (tetrahydro-pyran-4-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-acetylamino-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid methylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid isopropylamide;  
[2-(1H-indazol-3-yl)-1H-benzoimidazol-5-yl]-morpholin-4-yl-methanone;  
35 [2-(1H-indazol-3-yl)-1H-benzoimidazol-5-yl]-(4-methyl-piperazin-1-yl)-methanone;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid benzyl-methyl-amide;

- 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 3-nitro-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 2-fluoro-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 2,4-difluoro-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 2,6-difluoro-benzylamide;  
5 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-bromo-2-fluoro-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-chloro-2-fluoro-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-bromo-2-fluoro-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 3,4-difluoro-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 3,4,5-trifluoro-benzylamide;  
10 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (4'-chloro-biphenyl-4-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (3',5'-dichloro-biphenyl-4-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (4'-fluoro-biphenyl-4-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 2-fluoro-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 2,6-difluoro-3-methyl-benzylamide;  
15 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 2,4-dichloro-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-chloro-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-chloro-2-methyl-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-fluoro-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2'-chloro-biphenyl-4-ylmethyl)-amide;  
20 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (6-trifluoromethyl-pyridin-3-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (5-pyridin-2-yl-thiophen-2-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (3-imidazol-1-yl-propyl)-amide;  
25 4-[2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carbonyl]-piperazine-1-carboxylic acid tert-butyl ester;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2,6-difluoro-4-chloro-benzyl)amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2,4-dichloro-6-fluoro-benzyl)amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (3-fluoro-4-chloro-benzyl)amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2-fluoro-4-chloro-6-methyl-benzyl)amide;  
30 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (6-methoxy-pyridin-3-ylmethyl)-amide;  
2-[5-(benzyloxy)-2H-pyrazol-3-yl]-1H-benzoimidazole;  
2-[5-(3-phenyl-allyloxy)-2H-pyrazol-3-yl]-1H-benzoimidazole;  
2-[5-(2-methyl-allyloxy)-2H-pyrazol-3-yl]-1H-benzoimidazole;  
2-[5-(3,7-dimethyl-octa-2,6-dienyloxy)-2H-pyrazol-3-yl]-1H-benzoimidazole;  
35 2-[5-(3-bromo-benzyloxy)-2H-pyrazol-3-yl]-1H-benzoimidazole;  
3-[5-(1H-benzoimidazol-2-yl)-1H-pyrazol-3-yloxymethyl]-benzonitrile;



- 2-[5-(4-trifluoromethyl-benzyloxy)-2H-pyrazol-3-yl]-1H-benzimidazole;  
2-[5-(3,4-dichloro-benzyloxy)-2H-pyrazol-3-yl]-1H-benzimidazole;  
2-[5-(pentafluorophenylmethoxy)-2H-pyrazol-3-yl]-1H-benzimidazole;  
2-[5-(4-*tert*-butyl-benzyloxy)-2H-pyrazol-3-yl]-1H-benzimidazole;  
5 2-[5-(2-benzenesulfonylmethyl-benzyloxy)-2H-pyrazol-3-yl]-1H-benzimidazole;  
4-[5-(1H-benzimidazol-2-yl)-1H-pyrazol-3-yloxymethyl]-benzonitrile;  
2-[5-(biphenyl-4-ylmethoxy)-2H-pyrazol-3-yl]-1H-benzimidazole;  
2,3-dichloro-benzenesulfonic acid 5-(1H-benzimidazol-2-yl)-1H-pyrazol-3-yl ester;  
2-[5-(2-morpholin-4-yl-ethoxy)-2H-pyrazol-3-yl]-1H-benzimidazole;  
10 2-[5-(2-piperidin-1-yl-ethoxy)-2H-pyrazol-3-yl]-1H-benzimidazole;  
2-[5-(3-methoxy-benzyloxy)-2H-pyrazol-3-yl]-1H-benzimidazole;  
2-[5-(1H-benzimidazol-2-yl)-1H-pyrazol-3-yloxy]-1-*p*-tolyl-ethanone;  
1-[5-(1H-benzimidazol-2-yl)-1H-pyrazol-3-yloxy]-3,3,4,4,4-pentafluoro-butan-2-one;  
2-[5-(1H-benzimidazol-2-yl)-1H-pyrazol-3-yloxy]-1-biphenyl-4-yl-ethanone;  
15 1-[5-(1H-benzimidazol-2-yl)-1H-pyrazol-3-yloxy]-butan-2-one;  
2-[5-(1H-benzimidazol-2-yl)-1H-pyrazol-3-yloxy]-1-(4-dimethylamino-phenyl)-ethanone;  
2-[5-(1H-benzimidazol-2-yl)-1H-pyrazol-3-yloxy]-1-(3-phenyl-isoxazol-5-yl)-ethanone;  
2-[5-(1H-benzimidazol-2-yl)-1H-pyrazol-3-yloxy]-*N*-phenyl-acetamide;  
1-[5-(1H-benzimidazol-2-yl)-1H-pyrazol-3-yloxy]-3,3-dimethyl-butan-2-one;  
20 1-adamantan-1-yl-2-[5-(1H-benzimidazol-2-yl)-1H-pyrazol-3-yloxy]-ethanone;  
2-[5-(1H-benzimidazol-2-yl)-1H-pyrazol-3-yloxy]-1-naphthalen-2-yl-ethanone;  
4-{2-[5-(1H-benzimidazol-2-yl)-1H-pyrazol-3-yloxy]-acetyl}-benzonitrile;  
6-{2-[5-(1H-benzimidazol-2-yl)-1H-pyrazol-3-yloxy]-acetyl}-3,4-dihydro-1H-quinolin-2-one;  
2-[5-(1H-benzimidazol-2-yl)-1H-pyrazol-3-yloxy]-1-(4-trifluoromethoxy-phenyl)-ethanone;  
25 5-{2-[5-(1H-benzimidazol-2-yl)-1H-pyrazol-3-yloxy]-acetyl}-2-chloro-benzenesulfonamide;  
2-[5-(1H-benzimidazol-2-yl)-1H-pyrazol-3-yloxy]-1-(4-methoxy-phenyl)-ethanone;  
2-[5-(1H-benzimidazol-2-yl)-1H-pyrazol-3-yloxy]-1-cyclopropyl-ethanone;  
isonicotinic acid 5-(1H-benzimidazol-2-yl)-1H-pyrazol-3-yl ester;  
2,2-dimethyl-propionic acid 5-(1H-benzimidazol-2-yl)-1H-pyrazol-3-yl ester;  
30 benzyloxy-acetic acid 5-(1H-benzimidazol-2-yl)-1H-pyrazol-3-yl ester;  
benzoic acid 5-(1H-benzimidazol-2-yl)-1H-pyrazol-3-yl ester;  
4-methoxy-benzoic acid 5-(1H-benzimidazol-2-yl)-1H-pyrazol-3-yl ester;  
phenyl-acetic acid 5-(1H-benzimidazol-2-yl)-1H-pyrazol-3-yl ester;  
2,3,4,5,6-Pentafluoro-benzoic acid 5-(1H-benzimidazol-2-yl)-1H-pyrazol-3-yl ester;  
35 cyclopropanecarboxylic acid 5-(1H-benzimidazol-2-yl)-1H-pyrazol-3-yl ester;  
2,2,3,3,4,4,4-heptafluoro-butyric acid 5-(1H-benzimidazol-2-yl)-1H-pyrazol-3-yl ester;

- cyclopentanecarboxylic acid 5-(1H-benzoimidazol-2-yl)-1H-pyrazol-3-yl ester;  
 3-phenyl-propionic acid 5-(1H-benzoimidazol-2-yl)-1H-pyrazol-3-yl ester;  
 biphenyl-4-carboxylic acid 5-(1H-benzoimidazol-2-yl)-1H-pyrazol-3-yl ester;  
 3,5-bis-trifluoromethyl-benzoic acid 5-(1H-benzoimidazol-2-yl)-1H-pyrazol-3-yl ester;  
 5 4-trifluoromethyl-benzoic acid 5-(1H-benzoimidazol-2-yl)-1H-pyrazol-3-yl ester;  
 thiophene-2-carboxylic acid 5-(1H-benzoimidazol-2-yl)-1H-pyrazol-3-yl ester;  
 or an N-oxide, prodrug, acid bioisostere, pharmaceutically acceptable salt or solvate of such compound; or an N-oxide, prodrug, or acid bioisostere of such salt or solvate.
- 10 157. A compound according to claim 14 which is  
 2-(5-ethyl-2H-pyrazol-3-yl)-5,6-dimethyl-1H-benzimidazole; or  
 2-(5-methyl-2H-pyrazol-3-yl)-5,6-dimethyl-1H-benzimidazole;  
 or an N-oxide, prodrug, acid bioisostere, pharmaceutically acceptable salt or solvate of such compound; or an N-oxide, prodrug, or acid bioisostere of such salt or solvate.
- 15 158. A compound according to claim 54 which is  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid benzylamide;  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-methylamide;  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-ethylamide;  
 20 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-isopropylamide;  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-phenylamide;  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-phenethylamide;  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-morpholinoamide;  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-(N'-methylpiperazino)amide;  
 25 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-pyrrolidinoamide;  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-(isobutyl)amide;  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-(cyclohexylmethyl)amide;  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-(2-furfuryl)amide;  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-benzyl-N-methylamide;  
 30 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 2,4-dichloro-benzylamide;  
 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (3-ethoxy-propyl)-amide;  
 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-bromo-benzylamide;  
 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-methanesulfonyl-benzylamide;  
 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (naphthalen-1-ylmethyl)-amide;  
 35 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-trifluoromethyl-benzylamide;  
 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (thiophen-2-ylmethyl)-amide;

- 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-dimethylamino-benzylamide;  
4-([2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carbonyl]-amino)-methyl)-piperidine-1-carboxylic acid tert-butyl ester;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-nitro-benzylamide;  
5 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (pyridin-3-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 3-bromo-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 3-methoxy-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (benzo[1,3]dioxol-5-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (benzo[b]thiophen-3-ylmethyl)-amide;  
10 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (1,3-dimethyl-1H-pyrazol-4-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 2-trifluoromethoxy-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 2-methyl-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (3-methyl-thiophen-2-ylmethyl)-amide;  
15 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 2-trifluoromethyl-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-phenoxy-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 3-trifluoromethoxy-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (3-isopropoxy-propyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (1-methyl-1H-pyrazol-4-ylmethyl)-amide;  
20 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-isopropyl-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2,5-dimethyl-furan-3-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (benzo[b]thiophen-2-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid [3-(3-acetylamino-phenoxy)-propyl]-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (6-chloro-pyridin-3-ylmethyl)-amide;  
25 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid ([2,2']bithiophenyl-5-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2,3-dihydro-benzofuran-5-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-cyano-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 2-methylsulfanyl-benzylamide;  
30 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (benzo[b]thiophen-3-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (tetrahydro-pyran-4-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2,3-dihydro-benzo[1,4]dioxin-2-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (furan-3-ylmethyl)-amide;  
35 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 2-nitro-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (thiophen-3-ylmethyl)-amide;

- 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 3,5-dimethyl-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (1-methyl-1H-benzoimidazol-2-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 3-methyl-benzylamide;  
5 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 3-chloro-benzylamide;  
2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid 4-sulfamoyl-benzylamide;  
2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid (pyridin-3-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid 3-methoxy-benzylamide;  
2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid 2-methylsulfanyl-benzylamide;  
10 2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid (furan-3-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid 2-nitro-benzylamide;  
2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid 3,5-dimethyl-benzylamide;  
2-(1H-indazol-3-yl)-3H-benzoimidazole-4-carboxylic acid phenylamide;  
3-[6-(4-fluoro-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
15 3-[6-(4-methoxy-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
3-[6-(3-chloro-4-fluoro-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
3-(6-m-tolyl-1H-benzoimidazol-2-yl)-2H-indazole;  
3-(6-o-tolyl-1H-benzoimidazol-2-yl)-2H-indazole;  
3-(6-thiophen-3-yl-1H-benzoimidazol-2-yl)-2H-indazole;  
20 3-[6-(3-chloro-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
3-[6-(3-methoxy-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
3-[6-(3,5-dimethyl-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
3-(6-benzo[1,3]dioxol-5-yl-1H-benzoimidazol-2-yl)-2H-indazole;  
3-(6-hex-1-enyl-1H-benzoimidazol-2-yl)-2H-indazole;  
25 3-[6-(3,4-dimethoxy-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
3-[2-(2H-indazol-3-yl)-3H-benzoimidazol-5-yl]-phenol;  
4-[2-(2H-indazol-3-yl)-3H-benzoimidazol-5-yl]-phenol;  
3-[6-(3,4,5-trimethoxy-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
1-{5-[2-(2H-indazol-3-yl)-3H-benzoimidazol-5-yl]-thiophen-2-yl}-ethanone;  
30 {3-[2-(2H-indazol-3-yl)-3H-benzoimidazol-5-yl]-phenyl}-methanol;  
3-[6-(2,4-difluoro-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
3-[6-(4-fluoro-2-methyl-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
{4-[2-(2H-indazol-3-yl)-3H-benzoimidazol-5-yl]-phenyl}-methanol;  
3-(6-furan-2-yl-1H-benzoimidazol-2-yl)-2H-indazole;  
35 3-[6-(4-isopropyl-phenyl)-1H-benzoimidazol-2-yl]-2H-indazole;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (tetrahydro-pyran-4-ylmethyl)-amide;

- 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-acetylamino-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid methylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid isopropylamide;  
[2-(1H-indazol-3-yl)-1H-benzoimidazol-5-yl]-morpholin-4-yl-methanone;  
5 [2-(1H-indazol-3-yl)-1H-benzoimidazol-5-yl]-(4-methyl-piperazin-1-yl)-methanone;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid benzyl-methyl-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 3-nitro-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 2-fluoro-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 2,4-difluoro-benzylamide;  
10 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 2,6-difluoro-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-bromo-2-fluoro-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-chloro-2-fluoro-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-bromo-2-fluoro-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 3,4-difluoro-benzylamide;  
15 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 3,4,5-trifluoro-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 2,6-difluoro-3-methyl-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 2,4-dichloro-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-chloro-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-chloro-2-methyl-benzylamide;  
20 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid 4-fluoro-benzylamide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2'-chloro-biphenyl-4-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (6-trifluoromethyl-pyridin-3-ylmethyl)-amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (5-pyridin-2-yl-thiophen-2-ylmethyl)-amide;  
25 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (3-imidazol-1-yl-propyl)-amide;  
4-[2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carbonyl]-piperazine-1-carboxylic acid tert-butyl ester;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2,6-difluoro-4-chloro-benzyl)amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2,4-dichloro-6-fluoro-benzyl)amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (3-fluoro-4-chloro-benzyl)amide;  
30 2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2-fluoro-4-chloro-6-methyl-benzyl)amide;  
2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (6-methoxy-pyridin-3-ylmethyl)-amide;  
2-[5-(benzyloxy)-2H-pyrazol-3-yl]-1H-benzoimidazole;  
2-[5-(3-phenyl-allyloxy)2H-pyrazol-3-yl]-1H-benzoimidazole;  
2-[5-(3,7-dimethyl-octa-2,6-dienyloxy)-2H-pyrazol-3-yl]-1H-benzoimidazole;  
35 2-[5-(3-bromo-benzyloxy)-2H-pyrazol-3-yl]-1H-benzoimidazole;  
2-[5-(3,4-dichloro-benzyloxy)-2H-pyrazol-3-yl]-1H-benzoimidazole;

- 2-[5-(2-benzenesulfonylmethyl-benzyloxy)-2H-pyrazol-3-yl]-1H-benzimidazole;  
 2-[5-(biphenyl-4-ylmethoxy)-2H-pyrazol-3-yl]-1H-benzimidazole;  
 2-[5-(3-methoxy-benzyloxy)-2H-pyrazol-3-yl]-1H-benzimidazole;  
 isonicotinic acid 5-(1H-benzimidazol-2-yl)-1H-pyrazol-3-yl ester;  
 5 benzoic acid 5-(1H-benzimidazol-2-yl)-1H-pyrazol-3-yl ester;  
 3-phenyl-propionic acid 5-(1H-benzimidazol-2-yl)-1H-pyrazol-3-yl ester;  
 methyl 2-(1H-indazol-3-yl)-3H-benzimidazole-5- carboxylate;  
 5-methoxy-2-(1H-indazol-3-yl)-1H-benzimidazole; or  
 5-bromo 2-(1H-indazol-3-yl)-3H-benzimidazole;  
 10 or an N-oxide, prodrug, acid bioisostere, pharmaceutically acceptable salt or solvate of such compound; or an N-oxide, prodrug, or acid bioisostere of such salt or solvate.

159. A compound according to claim 54 which is

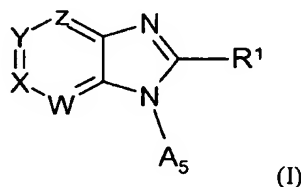
- 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-(cyclohexylmethyl)amide;  
 15 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid N-(2-furfuryl)amide;  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid 2,4-dichloro-benzylamide;  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid 4-bromo-benzylamide;  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid 4-methanesulfonyl-benzylamide;  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid 4-nitro-benzylamide;  
 20 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid 2-methyl-benzylamide;  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid (6-chloro-pyridin-3-ylmethyl)-amide;  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid (2,3-dihydro-benzofuran-5-ylmethyl)-amide;  
 2-(1H-Indazol-3-yl)-1H-benzimidazole-5-carboxylic acid 2-methylsulfanyl-benzylamide;  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid (benzo[b]thiophen-3-ylmethyl)-amide; 2-  
 25 (1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid 3-methyl-benzylamide;  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid 3-chloro-benzylamide;  
 2-(1H-indazol-3-yl)-3H-benzimidazole-4-carboxylic acid 2-methylsulfanyl-benzylamide;  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid 4-bromo-2-fluoro-benzylamide;  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid 2,4-dichloro-benzylamide;  
 30 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid 4-chloro-benzylamide;  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid 4-chloro-2-methyl-benzylamide;  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid (2,6-difluoro-4-chloro-benzyl)amide;  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid (2,4-dichloro-6-fluoro-benzyl)amide;  
 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid (3-fluoro-4-chloro-benzyl)amide;  
 35 2-(1H-indazol-3-yl)-1H-benzimidazole-5-carboxylic acid (2-fluoro-4-chloro-6-methyl-benzyl)amide;  
 or

2-(1H-indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (6-methoxy-pyridin-3-ylmethyl)-amide;  
or an N-oxide, prodrug, acid bioisostere, pharmaceutically acceptable salt or solvate of such  
compound; or an N-oxide, prodrug, or acid bioisostere of such salt or solvate.

- 5 160. A compound according to claim 3 which is  
2-(1H-Indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (2-piperidin-1-yl-ethyl)-amide;  
2-(1H-Indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid (pyridin-2-ylmethyl)-amide;  
2-(1H-Indazol-3-yl)-1H-benzoimidazole-5-carboxylic acid [3-(4-methyl-piperazin-1-yl)-propyl]-amide;  
N-[2-(1H-Indazol-3-yl)-1H-benzoimidazol-5-yl]-isobutyramide; or  
10 N-[3-(5,6-Dimethyl-1H-benzoimidazol-2-yl)-1H-pyrazol-4-yl]-2-piperidin-1-yl-acetamide;  
or an N-oxide, prodrug, acid bioisostere, pharmaceutically acceptable salt or solvate of such  
compound; or an N-oxide, prodrug, or acid bioisostere of such salt or solvate.

161. A compound of the of formula (I)

15



wherein

- X represents C-R<sup>2</sup> and W, Y and Z, which may be identical or different, represent CH or CR<sup>3</sup>;  
20 R<sup>1</sup> represents aryl or heteroaryl chosen from pyrazolyl, triazolyl, imidazolyl, indolyl, indazolyl, thieno-  
pyrazolyl, tetrahydroindazolyl, tetrahydrocyclopentapyrazolyl, dihydrofuropyrazolyl,  
oxodihydropyridazinyl, tetrahydropyrrolopyrazolyl, oxotetrahydropyrrolopyrazolyl,  
tetrahydropyranopyrazolyl, tetrahydropyridinopyrazolyl, and oxodihydropyridinopyrazolyl radicals, all  
these radicals being optionally substituted with one or more radicals X<sup>1</sup>, X<sup>2</sup> or X<sup>3</sup> chosen from H,  
25 halogen, haloalkyl, OH, R<sup>4</sup>, NO<sub>2</sub>, CN, S(O)<sub>n</sub>R<sup>4</sup>, OR<sup>4</sup>, NY<sup>1</sup>Y<sup>2</sup>, COR<sup>4</sup>, -C(=O)NY<sup>1</sup>Y<sup>2</sup>, -C(=O)OR<sup>4</sup>,  
-C(=O)OH, -N(R<sup>6</sup>)C(=O)R<sup>4</sup>, -N(R<sup>6</sup>)SO<sub>2</sub>R<sup>4</sup>, -N(R<sup>6</sup>)C(=O)NY<sup>1</sup>Y<sup>2</sup>, -N(R<sup>6</sup>)C(=O)OR<sup>4</sup>, -S(O)<sub>n</sub>OR<sup>4</sup>,  
-S(O)<sub>n</sub>NY<sup>1</sup>Y<sup>2</sup>, -OC(=O)NY<sup>1</sup>Y<sup>2</sup>, -OS(O)<sub>n</sub>R<sup>4</sup>, -OC(=O)R<sup>4</sup> and optionally substituted thienyl;  
R<sup>2</sup> and R<sup>3</sup> are such that:  
either R<sup>2</sup> and R<sup>3</sup>, which may be identical or different, represent H, R<sup>4</sup>, halogen, haloalkyl, OH, NO<sub>2</sub>,  
30 CN, OR<sup>4</sup>, COR<sup>4</sup>, S(O)<sub>n</sub>R<sup>4</sup>, -C(=O)NY<sup>1</sup>Y<sup>2</sup>, -C(=O)OR<sup>4</sup>, -C(=O)OH, -NY<sup>1</sup>Y<sup>2</sup>, -N(R<sup>6</sup>)C(=O)R<sup>4</sup>,  
-N(R<sup>6</sup>)SO<sub>2</sub>R<sup>4</sup>, -N(R<sup>6</sup>)C(=O)NY<sup>1</sup>Y<sup>2</sup>, -N(R<sup>6</sup>)C(=O)OR<sup>4</sup>, -S(O)<sub>n</sub>OR<sup>4</sup>, -S(O)<sub>n</sub>NY<sup>1</sup>Y<sup>2</sup>, -OC(=O)NY<sup>1</sup>Y<sup>2</sup> or  
-OC(=O)R<sup>4</sup>,

or  $R^2$  represents H,  $R^4$ , halogen, haloalkyl, OH,  $\text{NO}_2$ , CN,  $\text{OR}^4$ ,  $\text{COR}^4$ ,  $\text{S(O)}_n\text{R}^4$ ,  $-\text{C(=O)NY}^1\text{Y}^2$ ,  $-\text{C(=O)OR}^4$ ,  $-\text{C(=O)OH}$ ,  $-\text{NY}^1\text{Y}^2$ ,  $-\text{N(R}^6\text{)C(=O)R}^4$ ,  $-\text{N(R}^6\text{)SO}_2\text{R}^4$ ,  $-\text{N(R}^6\text{)C(=O)NY}^1\text{Y}^2$ ,  $-\text{N(R}^6\text{)C(=O)OR}^4$ ,  $-\text{S(O)}_n\text{OR}^4$ ,  $-\text{S(O)}_n\text{NY}^1\text{Y}^2$ ,  $-\text{OC(=O)NY}^1\text{Y}^2$  or  $-\text{OC(=O)R}^4$  and  $R^3$  represents alkyl, haloalkyl, halogen or  $\text{OR}^6$ ,

5

or  $R^2$  and  $R^3$  together form a 5- to 6-membered carbon-based ring containing one or more hetero atoms, which may be identical or different, chosen from O, N and S;

10

$R^4$  represents alkyl, alkenyl, alkynyl, cycloalkyl, aryl, heteroaryl, cycloalkylalkyl, heterocycloalkyl, heteroarylalkyl or arylalkyl, all these radicals being optionally substituted with one or more radicals chosen from optionally substituted aryl, halogen, alkyl, hydroxyalkyl, OH,  $\text{OR}^5$ ,  $\text{C(=O)NY}^3\text{Y}^4$ ,  $\text{NY}^3\text{Y}^4$ ,  $\text{alk-NY}^3\text{Y}^4$  and  $\text{C(=O)OR}^6$ ;

$R^5$  represents alkyl, alkenyl, cycloalkyl, heterocycloalkyl, aryl, heteroaryl, arylalkyl, cycloalkylalkyl, heteroarylalkyl or heterocycloalkylalkyl;

15

$\text{Y}^1$  and  $\text{Y}^2$  are such that: either  $\text{Y}^1$  and  $\text{Y}^2$ , which may be identical or different, represent H or optionally substituted alkyl, alkenyl, cycloalkyl, heterocycloalkyl, heterocycloalkylalkyl, aryl, arylalkyl, heteroaryl and heteroarylalkyl,

or  $\text{Y}^1$  and  $\text{Y}^2$  form, together with the nitrogen atom to which they are attached, a cyclic amino radical;

20

$\text{Y}^3$  and  $\text{Y}^4$  are such that: either  $\text{Y}^3$  and  $\text{Y}^4$ , which may be identical or different, represent hydrogen, alkenyl, alkyl, aryl, arylalkyl, cycloalkyl, heteroaryl or heteroarylalkyl or  $\text{Y}^3$  and  $\text{Y}^4$  form, together with the nitrogen atom to which they are attached, an optionally substituted cyclic amino radical;

25

$\text{A}_5$  represents H or alkyl;

$\text{R}^6$  is chosen from the values of  $\text{R}^5$ ;

where

all the alkyl, or alk, which represents alkyl, alkenyl, cycloalkyl, heterocycloalkyl, aryl, arylalkyl,

30

heteroaryl and heteroarylalkyl radicals present in the above radicals furthermore being optionally substituted with one or more radicals chosen from halogen atoms and hydroxyl, cyano, alkyl, alkoxy, acylamino ( $\text{NH-COalk}$ ),  $-\text{C(=O)OR}^6$ , acyl  $-\text{C(=O)R}^6$ , hydroxyalkyl, carboxyalkyl,  $\text{S(O)}_n\text{-alk}$ ,  $\text{S(O)}_n\text{-NH}_2$ ,  $\text{S(O)}_n\text{-NH(alk)}$ ,  $\text{S(O)}_n\text{-N(alk)}_2$ ,  $\text{CF}_3$ ,  $\text{OCF}_3$ ,  $\text{NO}_2$ , arylalkoxy, aryl, heteroaryl, aryloxy, aryloxyalkyl,  $-\text{C(=O)-NY}^3\text{Y}^4$  and  $\text{NY}^3\text{Y}^4$  radicals,

35



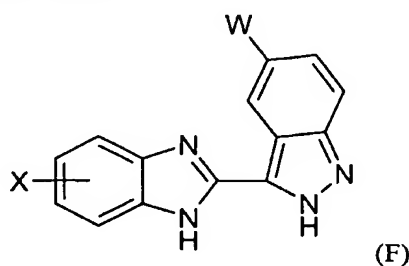
the latter radicals containing alkyl, aryl and heteroaryl being themselves optionally substituted with one or more radicals chosen from halogen atoms and alkyl radicals, free, salified or esterified carboxyl radicals and acylamino radicals  $\text{NH-C(O)R}^5$ ,

- 5 the phenyl radicals furthermore being optionally substituted with a dioxole radical;

n represents an integer from 0 to 2,

provided that when  $\text{R}^1$  represents an indazolyl radical

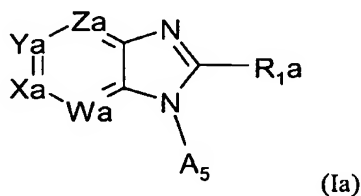
- 10 to give the compounds of formula (F) below:



with X representing H,  $\text{R}^2$  or  $\text{R}^3$  as defined above, then W of formula (F) necessarily represents H or unsubstituted alkyl; or the racemic, enantiomeric or diastereoisomeric isomer form of such compound,

15 or the addition salt with a mineral or an organic acid or with a mineral base of such compound.

162. A compound according to claim 160 of the formula (Ia)



wherein

- 20 Xa represents  $\text{C-R}^2\text{a}$ ; Wa, Ya and Za, which may be identical or different, represent CH or  $\text{CR}^3\text{a}$ ;  $\text{R}^1\text{a}$  represents aryl or heteroaryl chosen from pyrazolyl, triazolyl and indazolyl radicals, all these radicals being optionally substituted with one or more radicals  $\text{X}^1\text{a}$ ,  $\text{X}^2\text{a}$  or  $\text{X}^3\text{a}$  chosen from H, halogen, OH,  $\text{R}^4\text{a}$ ,  $\text{OR}^4\text{a}$ ,  $\text{NY}^1\text{aY}^2\text{a}$ ,  $\text{S(O)}_n\text{R}^4\text{a}$ ,  $-\text{C(=O)NY}^1\text{aY}^2\text{a}$ ,  $-\text{C(=O)OR}^4\text{a}$ ,  $-\text{N(R}^6\text{a)C(=O)R}^4\text{a}$ ,  $-\text{N(R}^6\text{a)SO}_2\text{R}^4\text{a}$ ,  $-\text{N(R}^6\text{a)C(=O)NY}^1\text{aY}^2\text{a}$ ,  $-\text{N(R}^6\text{a)C(=O)OR}^4\text{a}$ ,  $-\text{OC(=O)NY}^1\text{aY}^2\text{a}$ ,  $-\text{OC(=O)R}^4\text{a}$ ,  $-\text{OS(O)}_n\text{R}^4\text{a}$  and thienyl optionally substituted with an alkyl radical;
- 25  $\text{R}^2\text{a}$  and  $\text{R}^3\text{a}$  are such that:

either  $R^2a$  and  $R^3a$ , which may be identical or different, represent H,  $R^4a$ , halogen, OH,  $OR^4a$ ,  $C(=O)NY^1aY^2a$ ,  $-C(=O)OR^4a$  or  $-C(=O)OH$ , and  $R^3a$  represents alkyl, halogen or  $OR^6a$ , or  $R^2a$  represents H,  $R^4a$ , halogen, OH,  $OR^4a$ ,  $C(=O)NY^1aY^2a$ ,  $-C(=O)OR^4a$  or  $-C(=O)OH$ , and  $R^3a$  represents alkyl, halogen or  $OR^6a$ ,

5 or  $R^2a$  and  $R^3a$  together form an  $-O-CH_2-O-$  or  $-O-CH_2-CH_2-O-$  ring,

$R^4a$  represents alkyl, alkenyl, cycloalkyl, aryl, heteroaryl, cycloalkylalkyl, heterocycloalkyl, heteroarylalkyl or arylalkyl, all these radicals being optionally substituted with one or more radicals chosen from optionally substituted aryl, halogen, alkyl, hydroxyalkyl, OH,  $OR^5a$ ,  $C(=O)NY^3aY^4a$ ,  $NY^3aY^4a$ , alk- $NY^3aY^4a$  and  $C(=O)OR^6a$ ,

10  $R^5a$  represents alkyl, alkenyl, cycloalkyl, heterocycloalkyl, aryl, heteroaryl, arylalkyl, cycloalkylalkyl, heteroarylalkyl or heterocycloalkylalkyl, all these radicals being optionally substituted;

$Y^1a$  and  $Y^2a$  are such that: either  $Y^1a$  and  $Y^2a$ , which may be identical or different, represent H, alkyl, alkoxyalkyl, aryloxyalkyl, arylalkyl, heteroarylalkyl, heterocycloalkylalkyl, cycloalkyl, aryl or heteroaryl, all these radicals being optionally substituted, or  $Y^1a$  and  $Y^2a$  form, together with the

15 nitrogen atom to which they are attached, an optionally substituted cyclic amino radical;

$Y^3a$  and  $Y^4a$  are such that: either  $Y^3a$  and  $Y^4a$ , which may be identical or different, represent hydrogen, alkyl, aryl, arylalkyl, cycloalkyl, heteroaryl or heteroarylalkyl,

20 or  $Y^3a$  and  $Y^4a$  form, together with the nitrogen atom to which they are attached, a cyclic amino radical;

$A_5$  represents H or alkyl;

25 all the alkyl, alkenyl, cycloalkyl, heterocycloalkyl, aryl, arylalkyl, heteroaryl and heteroarylalkyl radicals present in the above radicals furthermore being optionally substituted with one or more radicals chosen from halogen atoms and hydroxyl, cyano, alkyl, alkoxy, acylamino ( $NH-C(O)R^6a$ ),  $-C(=O)OR^6a$ , acyl  $-C(=O)R^6a$ , hydroxyalkyl, carboxyalkyl,  $S(O)_n$ -alk,  $S(O)_n-NH_2$ ,  $S(O)_n-NH(alk)$ ,  $S(O)_n-N(alk)_2$ ,  $CF_3$ ,  $OCF_3$ ,  $NO_2$ , arylalkoxy, aryl, heteroaryl, aryloxy, aryloxyalkyl,  $-C(=O)-NY^3aY^4a$  and  $NY^3aY^4a$  radicals,

the latter radicals containing alkyl, aryl and heteroaryl themselves being optionally substituted with one or more radicals chosen from halogen atoms and alkyl radicals, alkoxy radicals, free, salified or esterified carboxyl radicals and acylamino radicals  $NH-C(O)R^6a$ ,

35

the phenyl radicals furthermore being optionally substituted with a dioxole radical;



$R^4$  represents alkyl, alkenyl, cycloalkyl, aryl, heteroaryl, cycloalkylalkyl, heterocycloalkyl, hetero-arylalkyl or arylalkyl, all these radicals being optionally substituted with one or more radicals chosen from aryl, OH,  $OR^5$ ,  $C(=O)NY^3Y^4$ ,  $NY^3Y^4$  and  $C(=O)OR^6$ ;

$R^5$  represents alkyl, alkenyl, cycloalkyl, heterocycloalkyl, aryl, heteroaryl, arylalkyl, cycloalkylalkyl,

5 heteroarylalkyl and heterocycloalkylalkyl;

$R^6$  represents H and C1-C4 alkyl,;

n represents an integer from 0 to 2

$Y^1$  and  $Y^2$  are such that: either  $Y^1$  and  $Y^2$ , which may be identical or different, represent H, alkyl, alkenyl, cycloalkyl, aryl, arylalkyl, heteroaryl or heteroarylalkyl, all these radicals being optionally substituted with one or more radicals chosen from hydroxyl,  $-C(=O)-NY^3Y^4$ ,  $-C(=O)OR^6$  and  $NY^3Y^4$ ,

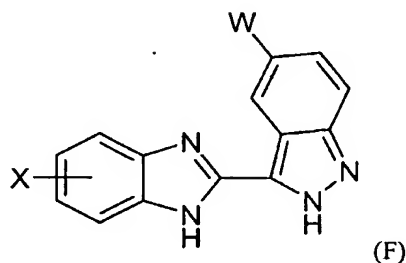
10 or  $Y^1$  and  $Y^2$  form, together with the nitrogen atom to which they are attached, a cyclic amino radical;

$Y^3$  and  $Y^4$  are such that: either  $Y^3$  and  $Y^4$ , which may be identical or different, represent hydrogen, alkenyl, alkyl, aryl, arylalkyl, cycloalkyl, heteroaryl or heteroarylalkyl or  $Y^3$  and  $Y^4$  form, together with the nitrogen atom to which they are attached, a cyclic amino radical;

15  $A_5$  represents H or alkyl;

provided that when  $R^1$  represents an indazolyl radical

to give the compound of formula (F) below:



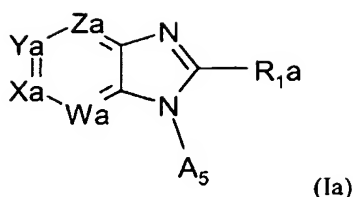
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with X representing H,  $R^2$  or  $R^3$  as defined above, then W of formula F necessarily represents H or unsubstituted alkyl; or

the racemic, enantiomeric or diastereoisomeric isomer form of such compound, or the addition salt with a mineral or an organic acid or with a mineral base of such compound.

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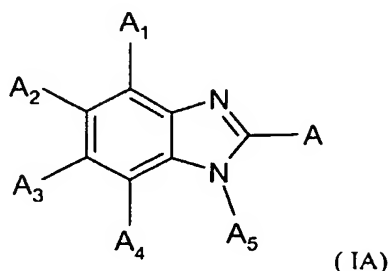
164. A compound according to claim 161 of the formula (Ia)



wherein

- Xa represents C-R<sup>2a</sup>; and Wa, Ya and Za, which may be identical or different, represent CH or CR<sup>3a</sup>;
- 5 R<sup>1a</sup> represents aryl or heteroaryl chosen from pyrazolyl, triazolyl and indazolyl radicals, all these radicals being optionally substituted with one or more radicals X<sup>1a</sup>, X<sup>2a</sup> or X<sup>3a</sup> chosen from H, halogen, OH, R<sup>4a</sup>, OR<sup>4a</sup>, NY<sup>1a</sup>Y<sup>2a</sup>, S(O)<sub>n</sub>R<sup>4a</sup>, -C(=O)NY<sup>1a</sup>Y<sup>2a</sup>, -C(=O)OR<sup>4a</sup>, -N(R<sup>6a</sup>)C(=O)R<sup>4a</sup>, -N(R<sup>6a</sup>)SO<sub>2</sub>R<sup>4a</sup>, -N(R<sup>6a</sup>)C(=O)NY<sup>1a</sup>Y<sup>2a</sup>, -N(R<sup>6a</sup>)C(=O)OR<sup>4a</sup>, -OC(=O)NY<sup>1a</sup>Y<sup>2a</sup> and -OC(=O)R<sup>4a</sup>, -OS(O)<sub>n</sub>R<sup>4a</sup> and thienyl optionally substituted with an alkyl radical,
- 10 R<sup>2a</sup> and R<sup>3a</sup> are such that:  
 either R<sup>2a</sup> and R<sup>3a</sup>, which may be identical or different, represent H, R<sup>4a</sup>, halogen, OH, OR<sup>4a</sup>, C(=O)NY<sup>1a</sup>Y<sup>2a</sup>, -C(=O)OR<sup>4a</sup>, or -C(=O)OH, and R<sup>3a</sup> represents alkyl, halogen or OR<sup>6a</sup>,  
 or R<sup>2a</sup> represents H, R<sup>4a</sup>, halogen, OH, OR<sup>4a</sup>, C(=O)NY<sup>1a</sup>Y<sup>2a</sup>, -C(=O)OR<sup>4a</sup>, or -C(=O)OH, and R<sup>3a</sup> represents alkyl, halogen or OR<sup>6a</sup>,
- 15 or R<sup>2a</sup> and R<sup>3a</sup> together form an -O-CH<sub>2</sub>-O or -O-CH<sub>2</sub>-CH<sub>2</sub>-O- ring;  
 R<sup>4a</sup> represents alkyl, cycloalkyl, aryl, heteroaryl, heterocycloalkyl, heteroarylalkyl or arylalkyl, all these radicals being optionally substituted with one or more radicals chosen from aryl, OH, OR<sup>5a</sup>, C(=O)NY<sup>3a</sup>Y<sup>4a</sup>, NY<sup>3a</sup>Y<sup>4a</sup> and C(=O)OR<sup>6a</sup>;
- R<sup>5a</sup> represents alkyl, alkenyl, cycloalkyl, heterocycloalkyl, aryl, heteroaryl, arylalkyl, cycloalkylalkyl, heteroarylalkyl or heterocycloalkylalkyl;
- 20 R<sup>6a</sup> represents H and C1-C4 alkyl;
- n represents an integer from 0 to 2;
- Y<sup>1a</sup> and Y<sup>2a</sup> are such that: either Y<sup>1a</sup> and Y<sup>2a</sup>, which may be identical or different, represent H, alkyl, cycloalkyl, aryl or heteroaryl, all these radicals being optionally substituted with one or more radicals
- 25 chosen from hydroxyl, -C(=O)-NY<sup>3a</sup>Y<sup>4a</sup>, -C(=O)OR<sup>6a</sup> and NY<sup>3a</sup>Y<sup>4a</sup>, or Y<sup>1a</sup> and Y<sup>2a</sup> form, together with the nitrogen atom to which they are attached, a cyclic amino radical;
- Y<sup>3a</sup> and Y<sup>4a</sup> are such that: either Y<sup>3a</sup> and Y<sup>4a</sup>, which may be identical or different, represent hydrogen, alkyl, aryl, arylalkyl, cycloalkyl, heteroaryl or heteroarylalkyl, or Y<sup>3a</sup> and Y<sup>4a</sup> form, together with the nitrogen atom to which they are attached, a cyclic amino radical,
- 30 A<sub>5</sub> represents H or alkyl; or  
 the racemic, enantiomeric or diastereoisomeric isomer form of such compound, or the addition salt with a mineral or an organic acid or with a mineral base of such compound.

165. A compound according to claim 161 of the formula IA



5

wherein

A represents a saturated heterocyclic radical which is either a 5- or 6-membered monocyclic radical or a bicyclic radical that is not more than 10-membered, these members being such that at least two of them represent a nitrogen atom and the others, which may be identical or different, represent a carbon member or a hetero atom member chosen from O, N and S, this heterocycle A being optionally substituted with one or more radicals  $XA^1$ ,  $XA^2$  or  $XA^3$  chosen from H, halogen, haloalkyl, OH,  $R^4$ ,  $NO_2$ , CN,  $S(O)_nR^4$ ,  $OR^4$ ,  $NY^1Y^2$ ,  $COR^4$ ,  $-C(=O)NY^1Y^2$ ,  $-C(=O)OR^4$ ,  $-C(=O)OH$ ,  $-N(R^6)C(=O)R^4$ ,  $-N(R^6)SO_2R^4$ ,  $-N(R^6)C(=O)NY^1Y^2$ ,  $-N(R^6)C(=O)OR^4$ ,  $-S(O)_nOR^4$ ,  $-S(O)_nNY^1Y^2$ ,  $-OC(=O)NY^1Y^2$ ,  $-OS(O)_nR^4$ ,  $-OC(=O)R^4$  and optionally substituted thienyl;

10

15

$A_1$ ,  $A_2$ ,  $A_3$  and  $A_4$ , which may be identical or different, are chosen from a hydrogen atom, halogen atoms and hydroxyl, alkyl, alkenyl, alkoxy, nitro, cyano, aryl, heteroaryl and aryloxy radicals, a carboxyl radical which is free, salified, esterified with an alkyl radical or amidated with a radical,  $NA^6A^7$  such that either  $A^6$  and  $A^7$ , which may be identical or different, are chosen from a hydrogen atom and optionally substituted alkyl, alkoxyalkyl, phenoxyalkyl, aryl, arylalkyl, cycloalkyl, cycloalkylalkyl, heterocycloalkylalkyl and heteroarylalkyl radicals, or  $A^6$  and  $A^7$  form, together with the nitrogen atom to which they are attached, an optionally substituted 5- or 6-membered cyclic radical, it being understood that two consecutive radicals among  $A_1$ ,  $A_2$ ,  $A_3$  and  $A_4$  can form, with the benzimidazole radical to which they are attached, a 5- to 6-membered carbon-based ring containing one or more hetero atoms, which may be identical or different, chosen from O, N and S;

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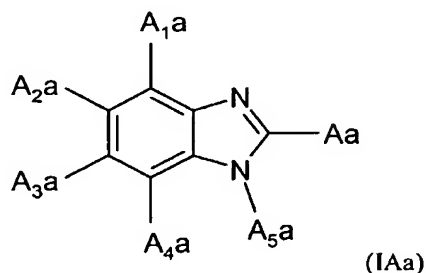
$A_5$  represents a hydrogen atom or an alkyl radical;

$R^6$  represents hydrogen, alkyl, alkenyl, cycloalkyl, phenyl, phenylalkyl and cycloalkylalkyl,

30

- all the alkyl, alkenyl, aryl, heteroaryl, aryloxy, cycloalkyl and heterocycloalkyl radicals present in the above radicals being optionally substituted with one or more radicals chosen from halogen atoms and hydroxyl, cyano, alkyl, alkoxy, amino, alkylamino, dialkylamino, phenylamino, phenylalkylamino, acylamino ( $\text{NH-COR}^6$ ),  $-\text{C}(=\text{O})\text{OR}^6$ , acyl  $-\text{C}(=\text{O})\text{R}^6$ , hydroxyalkyl, carboxyalkyl, phenoxyalkyl,  $\text{S}(\text{O})_n\text{-alk}$ ,  $\text{S}(\text{O})_n\text{-NH}_2$ ,  $\text{S}(\text{O})_n\text{-NH(alk)}$ ,  $\text{S}(\text{O})_n\text{-N(alk)}_2$ ,  $\text{CF}_3$ ,  $\text{OCF}_3$ ,  $\text{NO}_2$ ,  $\text{CN}$ , phenyl, itself optionally substituted with one or more halogen atoms, thienyl, phenoxy, phenylalkoxy,  $-\text{C}(=\text{O})\text{-NH}_2$ ,  $-\text{C}(=\text{O})\text{-NH(alk)}$  and  $\text{C}(=\text{O})\text{-N(alk)}_2$  radicals,
- all the above alkyl, alkenyl, alkoxy and alkylthio radicals being linear or branched and containing not more than 4 carbon atoms,
- all the phenyl radicals of the above radicals furthermore being optionally substituted with a dioxole radical;
- $n$  represents an integer from 0 to 2; or
- the racemic, enantiomeric or diastereoisomeric isomer form of such compound, or the addition salt with a mineral or an organic acid or with a mineral base of such compound.

166. A compound according to claim 161 of the formula (IAa):



- in which Aa represents a pyrazolyl, triazolyl or indazolyl radical, this heterocycle Aa being optionally substituted with one or more radicals  $\text{XA}^1$ ,  $\text{XA}^2$  or  $\text{XA}^3$  chosen from H, halogen, haloalkyl, OH,  $\text{R}^4$ ,  $\text{NO}_2$ ,  $\text{CN}$ ,  $\text{S}(\text{O})_n\text{R}^4$ ,  $\text{OR}^4$ ,  $\text{NY}^1\text{Y}^2$ ,  $\text{COR}^4$ ,  $-\text{C}(=\text{O})\text{NY}^1\text{Y}^2$ ,  $-\text{C}(=\text{O})\text{OR}^4$ ,  $-\text{C}(=\text{O})\text{OH}$ ,  $-\text{N}(\text{R}^6)\text{C}(=\text{O})\text{R}^4$ ,  $-\text{N}(\text{R}^6)\text{SO}_2\text{R}^4$ ,  $-\text{N}(\text{R}^6)\text{C}(=\text{O})\text{NY}^1\text{Y}^2$ ,  $-\text{N}(\text{R}^6)\text{C}(=\text{O})\text{OR}^4$ ,  $-\text{S}(\text{O})_n\text{OR}^4$ ,  $-\text{S}(\text{O})_n\text{NY}^1\text{Y}^2$ ,  $-\text{OC}(=\text{O})\text{NY}^1\text{Y}^2$ ,  $-\text{OS}(\text{O})_n\text{R}^4$ ,  $-\text{OC}(=\text{O})\text{R}^4$  and optionally substituted thienyl;

- $\text{A}_{1a}$ ,  $\text{A}_{2a}$ ,  $\text{A}_{3a}$  and  $\text{A}_{4a}$ , which may be identical or different, are chosen from a hydrogen atom, halogen atoms, hydroxyl, alkyl, alkoxy, nitro, cyano, phenyl and phenoxy radicals, and a carboxyl radical which is free, salfied, esterified with an alkyl radical or amidated with a

radical  $NA^6aA^7a$  such that either  $A^6a$  and  $A^7a$ , which may be identical or different, are chosen from a hydrogen atom and alkyl, phenyl, phenylalkyl, cycloalkylalkyl, cycloalkyl, furylalkyl, thienylalkyl and pyridylalkyl radicals, or  $A^6a$  and  $A^7a$  form, together with the nitrogen atom to which they are attached, a pyrrolidinyl, pyrazolidinyl, pyrazolinyl, piperidyl, morpholino or piperazinyl radical optionally substituted on the second nitrogen atom with an alkyl or phenyl radical, which are themselves optionally substituted,

it being understood that two consecutive radicals from among  $A_1a$ ,  $A_2a$ ,  $A_3a$  and  $A_4a$  may form, with the benzimidazole radical to which they are attached, an optionally substituted 5- to 6-membered carbon-based ring containing one or two oxygen atoms,

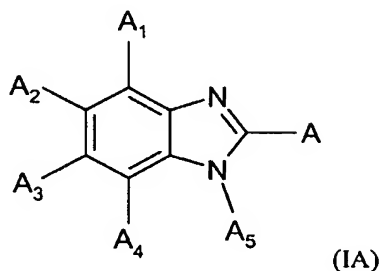
$A_5a$  represents a hydrogen atom or an alkyl radical,

the phenyl and phenoxy radicals above being optionally substituted with one or more radicals chosen from halogen atoms and hydroxyl, cyano, trifluoromethyl, trifluoromethoxy, alkyl, alkoxy, amino, alkylamino, dialkylamino, phenylamino, phenylalkylamino, free, salified or esterified carboxyl, and dioxole radicals;

all the alkyl, alkoxy and alkylthio radicals above being linear or branched and containing not more than 6 carbon atoms; or

the racemic, enantiomeric or diastereoisomeric isomer form of such compound, or the addition salt with a mineral or an organic acid or with a mineral base of such compound.

167. A compound according to claim 161 of the formula IA



wherein

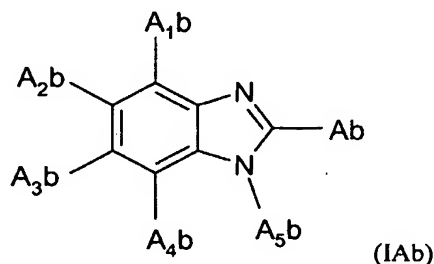


A represents a saturated heterocyclic radical which is either a 5- or 6-membered monocyclic radical or a bicyclic radical that is not more than 10-membered, these members being such that at least two of them represent a nitrogen atom and the others, which may be identical or different, represent a carbon member or a hetero atom member chosen from O, N and S, this heterocycle A optionally being  
 5 substituted with one or more radicals  $XA^1$ ,  $XA^2$  or  $XA^3$  chosen from halogen atoms, alkyl, alkoxy or alkylthio radicals or thienyl radicals optionally substituted with an alkyl radical;

$A_1$ ,  $A_2$ ,  $A_3$  and  $A_4$ , which may be identical or different, are chosen from a hydrogen atom, halogen atoms and hydroxyl, alkyl, alkoxy, nitro, cyano, phenyl and phenoxy radicals, a carboxyl radical which  
 10 is free, salified, esterified with an alkyl radical or amidated with a radical  $NA^6A^7$  such that either  $A^6$  and  $A^7$ , which may be identical or different, are chosen from a hydrogen atom and alkyl, phenyl, phenylalkyl, cycloalkylalkyl, cycloalkyl and heteroarylalkyl radicals, or  $A^6$  and  $A^7$  form, together with the nitrogen atom to which they are attached, a 5- or 6-membered cyclic radical,  
 it being understood that two consecutive radicals among  $A_1$ ,  $A_2$ ,  $A_3$  and  $A_4$  can form, with the  
 15 benzimidazole radical to which they are attached, a 5- to 6-membered carbon-based ring containing one or more hetero atoms, which may be identical or different, chosen from O, N and S;

$A_5$  represents a hydrogen atom or an alkyl radical;  
 all the phenyl, phenoxy, cycloalkyl and heteroarylalkyl radicals above being optionally substituted with one or more radicals chosen from halogen atoms and hydroxyl, cyano, trifluoromethyl,  
 20 trifluoromethoxy, alkyl, alkoxy, amino, alkylamino, dialkylamino, phenylamino, phenylalkylamino, free, salified or esterified carboxyl, and dioxole radicals;  
 all the alkyl, alkoxy and alkylthio radicals above being linear or branched and containing not more than 6 carbon atoms; or  
 the racemic, enantiomeric or diastereoisomeric isomer form of such compound, or the addition salt  
 25 with a mineral or an organic acid or with a mineral base of such compound.

168. A compound according to claim 161 of formula IAb



wherein

Ab represents a pyrazolyl or indazolyl radical optionally substituted with one or two radicals chosen from halogen atoms and OH, alkyl, alkynyl,  $-OR^{6b}$  including alkoxy,  $-COR^{6b}$ ,  $-O-COR^{6b}$ ,  $-OS(O)_nR^{6b}$ ,  $-O(CH_2)_n-CO-R^{6b}$ , phenyl, phenylalkyl,  $CF_3$ ,  $OCF_3$ ,  $NO_2$ , CN,  $NY^1bY^2b$ ,  $-NH-C(=O)NY^1bY^2b$ ,  
 5 acylamino ( $NH-CO-R^{6b}$ ),  $S(O)_n-alk$ ,  $S(O)_n-NY^1bY^2b$ ,  $-C(=O)-NY^1bY^2b$ ,  $-C(=O)OR^{6b}$ ,  $-NH-C(=O)R^{6b}$ ,  $-NH-S(O)_nR^{6b}$ ,  $-NH-C(=O)OR^{6b}$ ,  $-N(R^{6b})C(=O)NY^1bY^2b$ ,  $-OC(=O)NY^1bY^2b$  and thienyl radicals, all these radicals being optionally substituted,

with  $NY^1bY^2b$  such that either  $Y^1b$  and  $Y^2b$ , which may be identical or different, are chosen from  
 10 hydrogen and optionally substituted alkyl, cycloalkyl, cycloalkylalkyl, phenyl, naphthyl, phenoxy, phenylalkyl, phenylalkylthio and naphthylalkyl or  $Y^1b$  and  $Y^2b$  form, together with the nitrogen atom to which they are attached, a piperidyl, hexahydrofuran, morpholinyl or morpholinylalkyl radical;

$A_1b$ ,  $A_2b$ ,  $A_3b$  and  $A_4b$ , which may be identical or different, are chosen from a hydrogen atom,  
 15 halogen atoms, hydroxyl, alkyl, alkenyl,  $-OR^{6b}$  including alkoxy,  $-CO-R^{6b}$ ,  $-O-COR^{6b}$ ,  $-OS(O)_nR^{6b}$ ,  $-O(CH_2)_n-CO-R^{6b}$ , nitro, cyano, furyl, thienyl, benzothienyl, naphthyl, thianthrenyl, phenyl and phenoxy radicals and a carboxyl radical which is free, salified, esterified with an alkyl radical or amidated with a radical  $NA^6bA^7b$  such that either  $A^6b$  and  $A^7b$ , which may be identical or different, are chosen from hydrogen and alkyl, alkoxyalkyl,  
 20 phenoxyalkyl, phenyl, phenylalkyl, cycloalkylalkyl, cycloalkyl, furylalkyl, naphthylalkyl, thienylalkyl, piperidylalkyl, pyridylalkyl, benzothienylalkyl, pyrazolylalkyl, dihydrobenzofuranylalkyl, hexahydropyranylalkyl, ethylenedioxyphenylalkyl and benzimidazolylalkyl radicals, all these radicals being optionally substituted, or  $A^6b$  and  $A^7b$  form,  
 together with the nitrogen atom to which they are attached, a pyrrolidinyl, morpholino or  
 25 piperazinyl radical, the piperazinyl radical being optionally substituted on the second nitrogen atom with an alkyl radical itself optionally substituted,

it being understood that two consecutive radicals among  $A_1b$ ,  $A_2b$ ,  $A_3b$  and  $A_4b$  can form, with the benzimidazole radical to which they are attached, an optionally substituted

30 4,5-ethylenedioxybenzimidazole radical or an optionally substituted

4,5-methylenedioxybenzimidazole radical;

$A_5b$  represents a hydrogen atom;

all the above radicals containing alkyl, alkenyl, phenyl, phenoxy, furyl, thienyl, piperidyl, pyridyl,  
 35 pyrazolyl and benzimidazolyl being optionally substituted with one or more radicals chosen from halogen atoms and hydroxyl, cyano, alkyl, alkoxy, amino, alkylamino, dialkylamino, phenylamino,

phenylalkylamino, acylamino ( $\text{NH-COR}^{\text{b}}$ ),  $-\text{C(=O)OR}^{\text{b}}$ , acyl  $-\text{C(=O)R}^{\text{b}}$ , hydroxyalkyl, carboxyalkyl, phenoxyalkyl,  $\text{S(O)}_n\text{-alk}$ ,  $\text{S(O)}_n\text{-NH}_2$ ,  $\text{S(O)}_n\text{-NH(alk)}$ ,  $\text{S(O)}_n\text{-N(alk)}_2$ ,  $\text{CF}_3$ ,  $\text{OCF}_3$ ,  $\text{NO}_2$ , CN, phenyl, itself optionally substituted with one or more halogen atoms, thienyl, phenoxy, phenylalkoxy,  $-\text{C(=O)-NH}_2$ ,  $-\text{C(=O)-NH(alk)}$  and  $\text{C(=O)-N(alk)}_2$  radicals,

5

with n representing an integer from 0 to 2,

and  $\text{R}^{\text{b}}$  representing hydrogen, alkyl, alkenyl, cycloalkyl, phenyl, pyridyl, thienyl, naphthyl, isoxazole, adamantyl, quinoline, quinolone, dihydroquinolone,  $-\text{NH-phenyl}$ , phenylalkyl or cycloalkylalkyl, all these radicals being optionally substituted with a morpholino, piperidyl or phenyl radical itself optionally substituted with one or more radicals chosen from halogen atoms and the cyano,  $\text{CF}_3$ ,  $\text{OCF}_3$ , alkyl, phenyl- $\text{S(O)}_n\text{-alk-phenyl}$ , alkoxy,  $\text{NH}_2$ ,  $\text{NHalk}$ ,  $\text{N(alk)}_2$ ,  $\text{SO}_2\text{NH}_2$ ,  $\text{SO}_2\text{Nalk}$  or  $\text{SO}_2\text{N(alk)}_2$  radical,

10

all the alkyl, alkenyl, alkoxy and alkylthio radicals above being linear or branched and

15

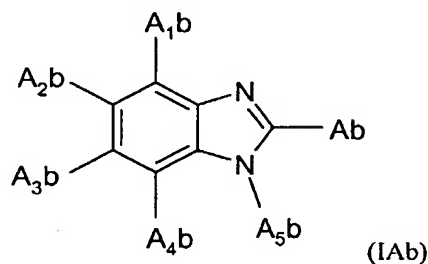
containing not more than 10 carbon atoms,

all the phenyl radicals of the above radicals furthermore being optionally substituted with a dioxole radical; or

the racemic, enantiomeric or diastereoisomeric isomer form of such compound, or the addition salt with a mineral or an organic acid or with a mineral base of such compound.

20

169. A compound according to claim 161 of the formula IAb



wherein

25

Ab represents a pyrazolyl or indazolyl radical optionally substituted with one or two radicals chosen from halogen atoms and OH, alkyl, alkynyl, alkoxy, phenyl, phenylalkyl,  $\text{CF}_3$ ,  $\text{OCF}_3$ ,  $\text{NO}_2$ , CN,  $\text{NY}^1\text{bY}^2\text{b}$ ,  $-\text{NH-C(=O)NY}^1\text{bY}^2\text{b}$ , acylamino ( $\text{NH-CO-R}^{\text{b}}$ ),  $\text{S(O)}_n\text{-alk}$ ,  $\text{S(O)}_n\text{-NY}^1\text{bY}^2\text{b}$ ,  $-\text{C(=O)-NY}^1\text{bY}^2\text{b}$ ,  $-\text{C(=O)OR}^{\text{b}}$ ,  $-\text{NH-C(=O)R}^{\text{b}}$ ,  $-\text{NH-S(O)}_n\text{R}^{\text{b}}$ ,  $-\text{NH-C(=O)OR}^{\text{b}}$ ,  $-\text{N(R}^{\text{b}}\text{)C(=O)NY}^1\text{bY}^2\text{b}$ ,  $-\text{OC(=O)NY}^1\text{bY}^2\text{b}$  and thienyl radicals which are optionally substituted,

with  $NY^1bY^2b$  such that either  $Y^1b$  and  $Y^2b$ , which may be identical or different, are chosen from hydrogen and optionally substituted alkyl, cycloalkyl, cycloalkylalkyl, phenyl, naphthyl, phenoxy, phenylalkyl, phenylalkylthio and naphthylalkyl or  $Y^1b$  and  $Y^2b$  form, together with the nitrogen atom to which they are attached, a piperidyl, hexahydrofuran, morpholinyl or morpholinylalkyl radical;

- 5         $A_1b$ ,  $A_2b$ ,  $A_3b$  and  $A_4b$ , which may be identical or different, are chosen from a hydrogen atom, halogen atoms, hydroxyl, alkyl, alkenyl, alkoxy, nitro, cyano, furyl, thienyl, benzothienyl, naphthyl, thianthrenyl, phenyl and phenoxy radicals and a carboxyl radical which is free, salified, esterified with an alkyl radical or amidated with a radical  $NA^6bA^7b$  such that either  $A^6b$  and  $A^7b$ , which may be identical or different, are chosen from hydrogen and alkyl,
- 10        alkoxyalkyl, phenoxyalkyl, phenyl, phenylalkyl, cycloalkylalkyl, cycloalkyl, furylalkyl, naphthylalkyl, thienylalkyl, piperidylalkyl, pyridylalkyl, benzothienylalkyl, pyrazolylalkyl, dihydrobenzofuranylalkyl, hexahydropyranylalkyl, ethylenedioxyphenylalkyl and benzimidazolylalkyl radicals, all these radicals being optionally substituted, or  $A^6b$  and  $A^7b$  form, together with the nitrogen atom to which they are attached, a pyrrolidinyl, morpholino or
- 15        piperazinyl radical, the piperazinyl radical being optionally substituted on the second nitrogen atom with an alkyl radical itself optionally substituted,

it being understood that two consecutive radicals among  $A_1b$ ,  $A_2b$ ,  $A_3b$  and  $A_4b$  can form, with the benzimidazole radical to which they are attached, an optionally substituted

- 20        4,5-ethylenedioxybenzimidazole radical or an optionally substituted 4,5-methylenedioxybenzimidazole radical;

$A_5b$  represents a hydrogen atom;

all the above radicals containing alkyl, alkenyl, phenyl, phenoxy, furyl, thienyl, piperidyl, pyridyl, pyrazolyl and benzimidazolyl being optionally substituted with one or more radicals chosen from

- 25        halogen atoms and hydroxyl, cyano, alkyl, alkoxy, amino, alkylamino, dialkylamino, phenylamino, phenylalkylamino, acylamino ( $NH-COR^6b$ ),  $-C(=O)OR^6b$ , acyl  $-C(=O)R^6b$ , hydroxyalkyl, carboxyalkyl, phenoxyalkyl,  $S(O)_n-alk$ ,  $S(O)_n-NH_2$ ,  $S(O)_n-NH(alk)$ ,  $S(O)_n-N(alk)_2$ ,  $CF_3$ ,  $OCF_3$ ,  $NO_2$ , CN, phenyl, itself optionally substituted with one or more halogen atoms, thienyl, phenoxy, phenylalkoxy,  $-C(=O)-NH_2$ ,  $-C(=O)-NH(alk)$  or  $C(=O)-N(alk)_2$  radicals;

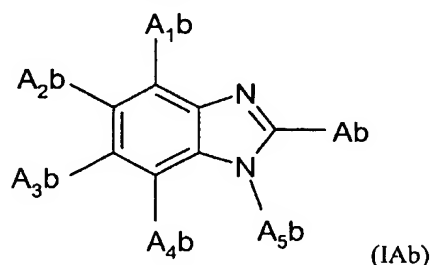
- 30        with  $n$  representing an integer from 0 to 2,

and  $R^6b$  representing hydrogen, alkyl, alkenyl, cycloalkyl, phenyl, phenylalkyl or cycloalkylalkyl, all the alkyl, alkenyl, alkoxy and alkylthio radicals above being linear or branched and containing not more than 10 carbon atoms,

- 35        all the phenyl radicals of the above radicals furthermore being optionally substituted with a dioxole radical; or

the racemic, enantiomeric or diastereoisomeric isomer form of such compound, or the addition salt with a mineral or an organic acid or with a mineral base of such compound.

170. A compound according to claim 161 of the formula IAb



wherein

Ab represents a pyrazolyl radical substituted with one or two radicals such that one is chosen from hydrogen, halogen atoms and alkyl, alkynyl,  $-\text{COR}^6\text{b}$ , phenyl, phenylalkyl,  $\text{CF}_3$ ,  $\text{NO}_2$ , CN,  $\text{NY}^1\text{bY}^2\text{b}$ ,  $-\text{NH}-\text{C}(=\text{O})\text{NY}^1\text{bY}^2\text{b}$ ,  $\text{NH}-\text{CO}-\text{R}^6\text{b}$ ,  $\text{S}(\text{O})_n\text{-alk}$ ,  $\text{S}(\text{O})_n\text{-NY}^1\text{bY}^2\text{b}$ ,  $-\text{C}(=\text{O})\text{-NY}^1\text{bY}^2\text{b}$ ,  $-\text{C}(=\text{O})\text{OR}^6\text{b}$ ,  $-\text{NH}-\text{C}(=\text{O})\text{R}^6\text{b}$ ,  $-\text{NH}-\text{S}(\text{O})_n\text{R}^6\text{b}$ ,  $-\text{NH}-\text{C}(=\text{O})\text{OR}^6\text{b}$ ,  $-\text{N}(\text{R}^6\text{b})\text{C}(=\text{O})\text{NY}^1\text{bY}^2\text{b}$  and thienyl radicals, all these radicals being optionally substituted,

and the other is chosen from OH,  $-\text{OR}^6\text{b}$ ,  $-\text{O}-\text{COR}^6\text{b}$ ,  $-\text{OS}(\text{O})_n\text{R}^6\text{b}$ ,  $-\text{O}(\text{CH}_2)_n\text{-CO}-\text{R}^6\text{b}$  and  $-\text{OC}(=\text{O})\text{NY}^1\text{bY}^2\text{b}$  radicals, all these radicals being optionally substituted,

with  $\text{NY}^1\text{bY}^2\text{b}$  such that  $\text{Y}^1\text{b}$  and  $\text{Y}^2\text{b}$ , which may be identical or different, are chosen from hydrogen and optionally substituted alkyl, cycloalkyl, cycloalkylalkyl, phenyl, naphthyl, phenoxy, phenylalkyl, phenylalkylthio and naphthylalkyl or  $\text{Y}^1\text{b}$  and  $\text{Y}^2\text{b}$  form, together with the nitrogen atom to which they are attached, a piperidyl, hexahydrofuran, morpholiny or morpholinyalkyl radical;

$\text{A}_1\text{b}$ ,  $\text{A}_2\text{b}$ ,  $\text{A}_3\text{b}$  and  $\text{A}_4\text{b}$ , which may be identical or different, are such that two of them represent hydrogen and the other two, which may be identical or different, are chosen from a hydrogen atom, halogen atoms, hydroxyl, alkyl, alkenyl,  $-\text{OR}^6\text{b}$  (including alkoxy),  $-\text{CO}-\text{R}^6\text{b}$ ,  $-\text{O}-\text{COR}^6\text{b}$ ,  $-\text{OS}(\text{O})_n\text{R}^6\text{b}$ ,  $-\text{O}(\text{CH}_2)_n\text{-CO}-\text{R}^6\text{b}$ , nitro, cyano, furyl, thienyl, benzothienyl, naphthyl, thianthrenyl, phenyl and phenoxy radicals and a carboxyl radical which is free, salified, esterified with an alkyl radical or amidated with a radical  $\text{NA}^6\text{bA}^7\text{b}$  such that either  $\text{A}^6\text{b}$  and  $\text{A}^7\text{b}$ , which may be identical or different, are chosen from hydrogen and alkyl, alkoxyalkyl, phenoxyalkyl, phenyl, phenylalkyl, cycloalkylalkyl, cycloalkyl, furylalkyl, naphthylalkyl, thienylalkyl, piperidylalkyl, pyridylalkyl, benzothienylalkyl, pyrazolylalkyl, dihydrobenzofuranylalkyl, hexahydropyranylalkyl, ethylenedioxyphenylalkyl and benz-

imidazolylalkyl radicals, all these radicals being optionally substituted, or A<sup>6b</sup> and A<sup>7b</sup> form, together with the nitrogen atom to which they are attached, a pyrrolidiny, morpholino or piperazinyl radical, the piperazinyl radical being optionally substituted on the second nitrogen atom with an alkyl radical itself optionally substituted;

5 A<sub>5b</sub> represents a hydrogen atom,

all the above radicals containing alkyl, alkenyl, phenyl, phenoxy, furyl, thienyl, piperidyl, pyridyl, pyrazolyl and benzimidazolyl being optionally substituted with one or more radicals chosen from halogen atoms and hydroxyl, cyano, alkyl, alkoxy, amino, alkylamino, dialkylamino, phenylamino, phenylalkylamino, acylamino (NH-COR<sup>6b</sup>), -C(=O)OR<sup>6b</sup>, acyl -C(=O)R<sup>6b</sup>, hydroxyalkyl,

10 carboxyalkyl, phenoxyalkyl, S(O)<sub>n</sub>-alk, S(O)<sub>n</sub>-NH<sub>2</sub>, S(O)<sub>n</sub>-NH(alk), S(O)<sub>n</sub>-N(alk)<sub>2</sub>, CF<sub>3</sub>, OCF<sub>3</sub>, NO<sub>2</sub>, CN, phenyl, itself optionally substituted with one or more halogen atoms, thienyl, phenoxy, phenylalkoxy, -C(=O)-NH<sub>2</sub>, -C(=O)-NH(alk) and C(=O)-N(alk)<sub>2</sub> radicals;

with n representing an integer from 0 to 2;

and R<sup>6b</sup> representing hydrogen, alkyl, alkenyl, cycloalkyl, phenyl, pyridyl, thienyl, naphthyl, isoxazole,

15 adamantyl, quinoline, quinolone, dihydroquinolone, -NH-phenyl, phenylalkyl and cycloalkylalkyl, all these radicals being optionally substituted with a morpholino, piperidyl or phenyl radical itself optionally substituted with one or more radicals chosen from halogen atoms and the cyano, CF<sub>3</sub>, OCF<sub>3</sub>, alkyl, phenyl-S(O)<sub>n</sub>-alk-phenyl, alkoxy, NH<sub>2</sub>, NHalk, N(alk)<sub>2</sub>, SO<sub>2</sub>NH<sub>2</sub>, SO<sub>2</sub>Nalk or SO<sub>2</sub>N(alk)<sub>2</sub> radical, all the alkyl, alkenyl, alkoxy and alkylthio radicals above being linear or branched and

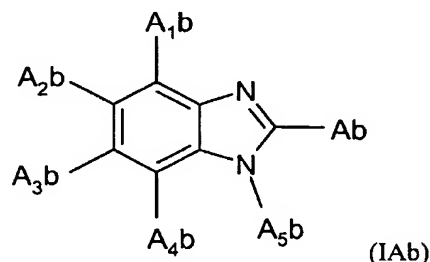
20 containing not more than 10 carbon atoms,

all the phenyl radicals of the above radicals furthermore being optionally substituted with a dioxole radical; or

the racemic, enantiomeric or diastereoisomeric isomer form of such compound, or the addition salt with a mineral or an organic acid or with a mineral base of such compound.

25

171. A compound according to claim 161 of the formula IAb



30 wherein

Ab represents a pyrazolyl or indazolyl radical optionally substituted with one or more radicals chosen from halogen atoms and alkyl, alkoxy and thienyl radicals;

5 A<sub>1</sub>b, A<sub>2</sub>b, A<sub>3</sub>b and A<sub>4</sub>b, which may be identical or different, are chosen from a hydrogen atom; halogen atom; hydroxyl, alkyl, alkenyl optionally substituted with phenyl itself optionally substituted with one or more halogen atoms, alkoxy, nitro, cyano, furyl, thienyl optionally substituted with acyl COalk, benzothienyl, naphthyl, thianthrenyl, phenyl and phenoxy which are optionally substituted; and a carboxyl radical which is free, salified, esterified with an alkyl radical or amidated with a radical NA<sup>6</sup>bA<sup>7</sup>b such that either A<sup>6</sup>b and A<sup>7</sup>b, which may be identical or different, are chosen from hydrogen, alkyl, alkoxyalkyl containing not more than 6 carbon atoms, phenoxyalkyl optionally substituted with acylamino NH-C(O)alk, phenyl, optionally substituted phenylalkyl, cycloalkylalkyl, cycloalkyl, furylalkyl optionally substituted with one or more alkyl radicals, naphthylalkyl, thienylalkyl optionally substituted with alkyl or thienyl, piperidylalkyl optionally substituted with a carboxyl radical which is free, salified or esterified with an alkyl radical, pyridylalkyl optionally substituted with one or more radicals chosen from halogen and CF<sub>3</sub>, benzothienylalkyl, pyrazolylalkyl optionally substituted with one or more alkyl radicals, dihydrobenzofuranylalkyl, hexahydropyranylalkyl, ethylenedioxyphenylalkyl, and benzimidazolylalkyl optionally substituted with one or more alkyl radicals; or A<sup>6</sup>b and A<sup>7</sup>b form, together with the nitrogen atom to which they are attached, a pyrrolidiny, morpholino or piperazinyl radical, the piperazinyl radical being optionally substituted on the second nitrogen atom with an alkyl radical, it being understood that two consecutive radicals among A<sub>1</sub>b, A<sub>2</sub>b, A<sub>3</sub>b and A<sub>4</sub>b can form, with the benzimidazole radical to which they are attached, an optionally substituted 4,5-ethylenedioxybenzimidazole radical or an optionally substituted 4,5-methylenedioxybenzimidazole radical;

25 A<sub>5</sub>a represents a hydrogen atom; the phenyl, phenoxy and phenylalkyl radicals above being optionally substituted with one or more radicals chosen from halogen atoms, hydroxyl, cyano, alkyl, alkoxy, amino, alkylamino, dialkylamino, phenylamino, phenylalkylamino and NH-COalk radicals, a carboxyl radical which is free, salified or esterified with an alkyl radical, and hydroxyalkyl, carboxyalkyl, phenoxyalkyl, alkylthio, SO<sub>2</sub>alk, SO<sub>2</sub>NH<sub>2</sub>, SO<sub>2</sub>-NH(alk), SO<sub>2</sub>-N(alk)<sub>2</sub>, CF<sub>3</sub>, OCF<sub>3</sub>, NO<sub>2</sub>, CN, phenyl, itself optionally substituted with one or more halogen atoms, thienyl, phenoxy, phenylalkoxy, -C(=O)-NH<sub>2</sub>, -C(=O)-NH(alk), C(=O)-N(alk)<sub>2</sub> and C(O)CH<sub>3</sub> radicals; all the alkyl or alk, alkenyl, alkoxy and alkylthio radicals above being linear or branched and containing not more than 4 carbon atoms,

all the phenyl radicals of the above radicals furthermore being optionally substituted with a dioxole radical; or

the racemic, enantiomeric or diastereoisomeric isomer form of such compound, or the addition salt with a mineral or an organic acid or with a mineral base of such compound.

5

172. A compound according to any one of claims 168, 169, 170 or 171 wherein when one of  $A_1b$ ,  $A_2b$ ,  $A_3b$  and  $A_4b$  represents a carboxyl radical amidated with a radical  $NA^6bA^7b$ , then either one of  $A^6b$  and  $A^7b$  represents a hydrogen atom or an alkyl radical and the other of  $A^6b$  and  $A^7b$  is chosen from the values defined for  $A^6b$  and  $A^7b$ , or  $A^6b$  and  $A^7b$  form, together with the nitrogen atom to which they are attached, a 5- or 6-membered cyclic radical; or

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the racemic, enantiomeric or diastereoisomeric isomer form of such compound, or the addition salt with a mineral or an organic acid or with a mineral base of such compound.

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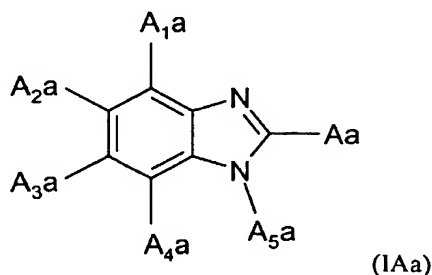
173. A compound according to claim 161 wherein X, W, Y and Z are such that two or three of them represent CH and the others are chosen from  $CR^2$  and  $CR^3$  and, when two of them represent CH and  $CR^2$  and  $CR^3$  are adjacent to each other, can form a dioxole radical; or the racemic, enantiomeric or diastereoisomeric isomer form of such compound, or the addition salt with a mineral or an organic acid or with a mineral base of such compound.

20

174. A compound according to claim 165 or claim 167 wherein  $A_1$ ,  $A_2$ ,  $A_3$  and  $A_4$  are such that two or three of them represent a hydrogen atom and, when two of them represent a hydrogen atom and the other two are on adjacent carbons, can form a dioxole radical; or the racemic, enantiomeric or diastereoisomeric isomer form of such compound, or the addition salt with a mineral or an organic acid or with a mineral base of such compound.

25

175. A compound according to claim 161 of the formula (IAa)



30



wherein

Aa represents a pyrazolyl, triazolyl or indazolyl radical, this heterocycle Aa being optionally substituted with one or more radicals  $XA^1$ ,  $XA^2$  or  $XA^3$  chosen from halogen atoms, alkyl, alkoxy, alkylthio radicals and thienyl radicals optionally substituted with an alkyl radical,

- 5 A<sub>1a</sub>, A<sub>2a</sub>, A<sub>3a</sub> and A<sub>4a</sub>, which may be identical or different, are chosen from a hydrogen atom, halogen atoms, hydroxyl, alkyl, alkoxy, nitro, cyano, phenyl and phenoxy radicals, and a carboxyl radical which is free, salified, esterified with an alkyl radical or amidated with a radical  $NA^6aA^7a$  such that either A<sup>6a</sup> and A<sup>7a</sup>, which may be identical or different, are chosen from a hydrogen atom and alkyl, phenyl, phenylalkyl, cycloalkylalkyl, cycloalkyl, furylalkyl, thienylalkyl and pyridylalkyl radicals, or A<sup>6a</sup> and
- 10 A<sup>7a</sup> form, together with the nitrogen atom to which they are attached, a pyrrolidinyl, pyrazolidinyl, pyrazolinyl, piperidyl, morpholino or piperazinyl radical optionally substituted on the second nitrogen atom with an alkyl or phenyl radical, which are themselves optionally substituted, it being understood that two consecutive radicals from among A<sub>1a</sub>, A<sub>2a</sub>, A<sub>3a</sub> and A<sub>4a</sub> may form, with the benzimidazole radical to which they are attached, an optionally substituted 5- to 6-membered
- 15 carbon-based ring containing one or two oxygen atoms, A<sub>5a</sub> represents a hydrogen atom or an alkyl radical, the phenyl and phenoxy radicals above being optionally substituted with one or more radicals chosen from halogen atoms and hydroxyl, cyano, trifluoromethyl, trifluoromethoxy, alkyl, alkoxy, amino, alkylamino, dialkylamino, phenylamino, phenylalkylamino, free, salified or esterified carboxyl, and
- 20 dioxole radicals, all the alkyl, alkoxy and alkylthio radicals above being linear or branched and containing not more than 6 carbon atoms; or the racemic, enantiomeric or diastereoisomeric isomer form of such compound, or the addition salt with a mineral or an organic acid or with a mineral base of such compound.

25

176. A compound according to claim 161 wherein R<sup>1</sup> represents a pyrazolyl or indazolyl radical.

177. A compound according to claim 166 or claim 175 wherein

Aa represents an optionally substituted pyrazolyl or an optionally substituted indazolyl radical,

- 30 A<sub>1a</sub>, A<sub>2a</sub>, A<sub>3a</sub> and A<sub>4a</sub> are chosen from the following values:

A<sub>1a</sub> represents hydrogen or carboxyl or forms a ring with the adjacent member A<sub>2a</sub>;

A<sub>4a</sub> represents hydrogen or carboxyl or forms a ring with the adjacent member A<sub>3a</sub>;

A<sub>2a</sub> represents a carboxyl radical that is free, salified, esterified with an optionally substituted alkyl radical or an amidated carboxyl;

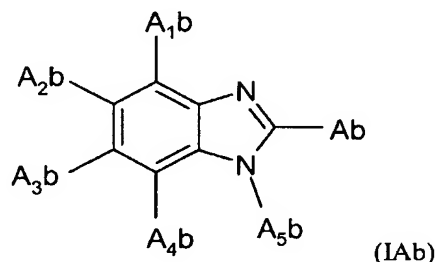
35

A<sub>2a</sub> and A<sub>3a</sub> represent two optionally substituted alkyl radicals; and

A<sub>5</sub>a represents hydrogen; or  
the racemic, enantiomeric or diastereoisomeric isomer form of such compound, or the addition salt with a mineral or an organic acid or with a mineral base of such compound.

5

178. A compound according to claim 161 of the formula (IAb):



10

wherein

Ab represents a pyrazolyl or indazolyl radical optionally substituted with one or more radicals chosen from halogen atoms and alkyl, alkoxy and thienyl radicals,

15 A<sub>1</sub>b, A<sub>2</sub>b, A<sub>3</sub>b and A<sub>4</sub>b, which may be identical or different, are chosen from a hydrogen atom, halogen atoms, hydroxyl, alkyl and alkoxy, nitro, cyano, phenyl and phenoxy radicals, and a carboxyl radical that is free, salified, esterified with an alkyl radical or amidated with a radical NA<sup>6</sup>bA<sup>7</sup>b such that either A<sup>6</sup>b and A<sup>7</sup>b, which may be identical or different, are chosen from alkyl, phenyl, phenylalkyl, cycloalkylalkyl, cycloalkyl and furylalkyl radicals, or A<sup>6</sup>b and A<sup>7</sup>b form, together with the nitrogen atom to which they are attached, a pyrrolidinyl, morpholino or piperazinyl radical optionally

20 substituted on the second nitrogen atom with an alkyl radical,

it being understood that two consecutive radicals from among A<sub>1</sub>b, A<sub>2</sub>b, A<sub>3</sub>b and A<sub>4</sub>b may form, with the benzimidazole radical to which they are attached, an optionally substituted

4,5-ethylenedioxybenzimidazole radical or 4,5-methylenedioxybenzimidazole radical,

A<sub>5</sub>b represents a hydrogen atom,

25 the phenyl and phenoxy radicals above being optionally substituted with one or more radicals chosen from halogen atoms and hydroxyl, cyano, alkyl, alkoxy, amino, alkylamino, dialkylamino, phenylamino, phenylalkylamino and free, salified or esterified carboxyl radicals,

all the alkyl, alkoxy and alkylthio radicals above being linear or branched and containing not more than 4 carbon atoms; or

the racemic, enantiomeric or diastereoisomeric isomer form of such compound, or the addition salt with a mineral or an organic acid or with a mineral base of such compound.

179. A pharmaceutical composition comprising a pharmaceutically effective amount of a compound  
5 according to any one of claims 3 to 178, together with one or more pharmaceutically acceptable carriers or excipients.

180. A method of treating a patient suffering from, or subject to, conditions which can be ameliorated by the administration of an inhibitor of the catalytic activity of Syk comprising  
10 administering to said patient a pharmaceutically effective amount of a compound according to any one of claims 3 to 178.

181. A method of treating a patient suffering from, or subject to, conditions which can be ameliorated by the administration of an inhibitor of the catalytic activity of Syk comprising  
15 administering to said patient a pharmaceutically effective amount of a composition according to any one of claims 1, 2 or 179.

182. A method of treating a patient suffering from, or subject to, conditions which can be ameliorated by the administration of an inhibitor of the catalytic activity of KDR comprising  
20 administering to said patient a pharmaceutically effective amount of a compound according to any one of claims 3 to 178.

183. A method of treating a patient suffering from, or subject to, conditions which can be ameliorated by the administration of an inhibitor of the catalytic activity of KDR comprising  
25 administering to said patient a pharmaceutically effective amount of a composition according to any one of claims 1, 2 or 179.

184. A method of treating a patient suffering from, or subject to, conditions which can be ameliorated by the administration of an inhibitor of the catalytic activity of tie2 comprising  
30 administering to said patient a pharmaceutically effective amount of a compound according to any one of claims 3 to 178.

185. A method of treating a patient suffering from, or subject to, conditions which can be ameliorated by the administration of an inhibitor of the catalytic activity of tie2 comprising  
35 administering to said patient a pharmaceutically effective amount of a composition according to any one of claims 1, 2 or 179.

186. A method of treating a patient suffering from, or subject to, conditions which can be ameliorated by the administration of an inhibitor of the catalytic activity of ITK comprising administering to said patient a pharmaceutically effective amount of a compound according to any one of claims 3 to 178.

187. A method of treating a patient suffering from, or subject to, conditions which can be ameliorated by the administration of an inhibitor of the catalytic activity of ITK comprising administering to said patient a pharmaceutically effective amount of a composition according to any one of claims 1, 2 or 179.

188. A method of treating inflammatory disease in a patient in need thereof, comprising administering to said patient a pharmaceutically effective amount of a compound according to any one of claims 3 to 178.

189. A method of treating inflammatory disease in a patient in need thereof, comprising administering to said patient a pharmaceutically effective amount of a composition according to any one of claims 1, 2 or 179.

190. A method of treating cancer in a patient in need thereof, comprising administering to said patient a pharmaceutically effective amount of a compound according to any one of claims 3 to 178.

191. A method of treating cancer in a patient in need thereof, comprising administering to said patient a pharmaceutically effective amount of a composition according to any one of claims 1, 2 or 179.

192. A method of treating Chronic Obstructive Pulmonary Disease, in a patient in need thereof, comprising administering to said patient a pharmaceutically effective amount of a compound according to any one of claims 3 to 178.

193. A method of treating Chronic Obstructive Pulmonary Disease, in a patient in need thereof, comprising administering to said patient a pharmaceutically effective amount of a composition according to any one of claims 1, 2 or 179.

194. A method of treating asthma, allergic rhinitis, atopic dermatitis, allergic conjunctivitis, chronic obstructive pulmonary disease, adult respiratory distress syndrome, silicosis, pulmonary sarcoidosis,

rheumatoid arthritis, osteoarthritis, rheumatoid spondylitis, gouty arthritis, traumatic arthritis, rubella arthritis, psoriatic arthritis, acute and chronic urticaria, cutaneous and systemic anaphylaxis, endotoxemia, sepsis, septic shock, endotoxic shock, gram negative sepsis, diabetes, multiple sclerosis, systemic lupus erythromatosis, viral infections, bacterial infections, parasitic infections, graft vs. host disease, organ transplant rejection, reperfusion injury, Crohn's disease or ulcerative colitis, in a patient in need thereof, comprising administering to said patient a pharmaceutically effective amount of a compound according to any one of claims 3 to 178.

195. A method of treating asthma, allergic rhinitis, atopic dermatitis, allergic conjunctivitis, chronic obstructive pulmonary disease, adult respiratory distress syndrome, silicosis, pulmonary sarcoidosis, rheumatoid arthritis, osteoarthritis, rheumatoid spondylitis, gouty arthritis, traumatic arthritis, rubella arthritis, psoriatic arthritis, acute and chronic urticaria, cutaneous and systemic anaphylaxis, endotoxemia, sepsis, septic shock, endotoxic shock, gram negative sepsis, diabetes, multiple sclerosis, systemic lupus erythromatosis, viral infections, bacterial infections, parasitic infections, graft vs. host disease, organ transplant rejection, reperfusion injury, Crohn's disease or ulcerative colitis, in a patient in need thereof, comprising administering to said patient a pharmaceutically effective amount of a composition according to any one of claims 1, 2 or 179.

196. A method of treating cancers, atherosclerosis, degenerative muscle diseases, obesity, congestive heart failure, Parkinson's, depression, schizophrenia, stroke, head trauma, spinal cord injury, Alzheimer's, neuropathic pain syndrome, amyotrophic lateral sclerosis, cachexia, osteoporosis or fibrotic diseases of the viscera, in a patient in need thereof, comprising administering to said patient a pharmaceutically effective amount of a compound according to any one of claims 3 to 178.

197. A method of treating cancers, atherosclerosis, degenerative muscle diseases, obesity, congestive heart failure, Parkinson's, depression, schizophrenia, stroke, head trauma, spinal cord injury, Alzheimer's, neuropathic pain syndrome, amyotrophic lateral sclerosis, cachexia, osteoporosis or fibrotic diseases of the viscera, in a patient in need thereof, comprising administering to said patient a pharmaceutically effective amount of a composition according to any one of claims 1, 2 or 179.

198. A method of treating asthma, atopic dermatitis, psoriasis, dermatitis herpetiformis, eczema, necrotizing and cutaneous vasculitis, bullous disease, acute and chronic urticaria, allergic rhinitis or allergic conjunctivitis, arthritis, rheumatoid arthritis, rheumatoid spondylitis, gouty arthritis, traumatic arthritis, rubella arthritis, psoriatic arthritis and osteoarthritis, Chronic Obstructive Pulmonary Disease, adult respiratory distress syndrome, silicosis, pulmonary sarcoidosis, acute synovitis, autoimmune diabetes, autoimmune encephalomyelitis, colitis, atherosclerosis, peripheral vascular disease,

cardiovascular disease, cutaneous and systemic anaphylaxis, endotoxemia, sepsis, septic shock, endotoxic shock, gram negative sepsis, diabetes, multiple sclerosis, restenosis, myocarditis, B cell lymphomas, systemic lupus erythematosus, viral infections, bacterial infections, parasitic infections, graft v host disease and other transplant associated rejection events, reperfusion injury, Crohn's disease, ulcerative colitis, cancers, tumours, atherosclerosis, degenerative muscle diseases, obesity, congestive heart failure, Parkinson's, depression, schizophrenia, stroke, head trauma, spinal cord injury, Alzheimer's, neuropathic pain syndrome, amyotrophic lateral sclerosis, cachexia, osteoporosis, fibrotic diseases of the viscera, or inflammatory bowel disease, in a patient in need thereof, comprising administering to said patient a pharmaceutically effective amount of a compound according to any one of claims 3 to 178.

199. A method of treating asthma, atopic dermatitis, psoriasis, dermatitis herpetiformis, eczema, necrotizing and cutaneous vasculitis, bullous disease, acute and chronic urticaria, allergic rhinitis or allergic conjunctivitis, arthritis, rheumatoid arthritis, rheumatoid spondylitis, gouty arthritis, traumatic arthritis, rubella arthritis, psoriatic arthritis and osteoarthritis, Chronic Obstructive Pulmonary Disease, adult respiratory distress syndrome, silicosis, pulmonary sarcoidosis, acute synovitis, autoimmune diabetes, autoimmune encephalomyelitis, colitis, atherosclerosis, peripheral vascular disease, cardiovascular disease, cutaneous and systemic anaphylaxis, endotoxemia, sepsis, septic shock, endotoxic shock, gram negative sepsis, diabetes, multiple sclerosis, restenosis, myocarditis, B cell lymphomas, systemic lupus erythematosus, viral infections, bacterial infections, parasitic infections, graft v host disease and other transplant associated rejection events, reperfusion injury, Crohn's disease, ulcerative colitis, cancers, tumours, atherosclerosis, degenerative muscle diseases, obesity, congestive heart failure, Parkinson's, depression, schizophrenia, stroke, head trauma, spinal cord injury, Alzheimer's, neuropathic pain syndrome, amyotrophic lateral sclerosis, cachexia, osteoporosis, fibrotic diseases of the viscera, or inflammatory bowel disease, in a patient in need thereof, comprising administering to said patient a pharmaceutically effective amount of a composition according to any one of claims 1, 2 or 179.

200. A method of inhibiting angiogenesis in a patient in need thereof, comprising administering to said patient a pharmaceutically effective amount of a compound according to any one of claims 3 to 178.

201. A method of inhibiting angiogenesis in a patient in need thereof, comprising administering to said patient a pharmaceutically effective amount of a composition according to any one of claims 1, 2 or 179.

202. A method according to claim 190 or claim 191 wherein the cancer being treated is colorectal, prostate, breast, thyroid, skin, colon or lung cancer.
203. A method of treating asthma in a patient in need thereof comprising administering to said  
5 patient a pharmaceutically effective amount of a compound according to any one of claims 3 to 178.
204. A method of treating asthma in a patient in need thereof comprising administering to said patient a pharmaceutically effective amount of a composition according to any one of claims 1, 2 or 179.
- 10 205. A method of treating psoriasis in a patient in need thereof comprising administering to said patient a pharmaceutically effective amount of a compound according to any one of claims 3 to 178.
206. A method of treating psoriasis in a patient in need thereof comprising administering to said  
15 patient a pharmaceutically effective amount of a composition according to any one of claims 1, 2 or 179.
207. A method of treating joint inflammation in a patient in need thereof comprising administering to said patient a pharmaceutically effective amount of a compound according to any one of claims 3 to  
20 178.
208. A method of treating joint inflammation in a patient in need thereof comprising administering to said patient a pharmaceutically effective amount of a composition according to any one of claims 1, 2 or 179.
- 25 209. A method of treating inflammatory bowel disease in a patient in need thereof comprising administering to said patient a pharmaceutically effective amount of a compound according to any one of claims 3 to 178.
- 30 210. A method of treating inflammatory bowel disease in a patient in need thereof comprising administering to said patient a pharmaceutically effective amount of a composition according to any one of claims 1, 2 or 179.
211. A process for preparing the compound of formula (I) according to claim 161, characterized in  
35 that an acid of formula (D):



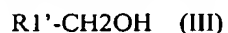
in which R1' has the meaning given in Claim 161 for R<sup>1</sup>, in which the possible reactive functions are optionally protected with protecting groups,

is subjected to an esterification reaction to give an acid ester of formula (II)



5 in which R1' has the meaning given above and alk represents an alkyl radical,

is subjected to a reduction reaction to give the alcohol of formula (III):



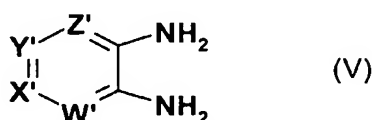
in which R1' has the meaning given above,

which is oxidized to the aldehyde of formula (IV):



in which R1' has the meaning given above,

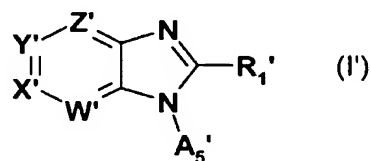
and the compound of formula (D) or compound of formula (IV) as defined above is reacted with a diamine of formula (V):



15

in which W', X', Y' and Z' have the meanings given in Claim 161, respectively, for W, X, Y and Z, in which the possible reactive functions are optionally protected with protecting groups,

20 to give a compound of formula (I'):



25 in which A5' has the meaning given in Claim 161 for A<sub>5</sub>, in which the possible reactive functions are optionally protected with protecting groups, and R1', W', X', Y' and Z' have the meanings given above,

the compound of formula (I') being a compound which may be a compound of formula (I) and which, in order to obtain a compound or other compound of formula (I), may be subjected, if desired and if  
30 necessary, to one or more of the following conversion reactions, in any order:



- a) an esterification reaction of an acid function,
  - b) a saponification reaction of an ester function to an acid function,
  - c) an oxidation reaction of an alkylthio group to the corresponding sulfoxide or sulphone,
  - 5 d) a reaction for conversion of a ketone function to an oxime function,
  - e) a reaction for reduction of the free or esterified carboxyl function to an alcohol function,
  - f) a reaction for conversion of the alkoxy function to a hydroxyl function, or alternatively of the hydroxyl function to an alkoxy function,
  - g) a reaction for oxidation of an alcohol function to an aldehyde, acid or ketone function,
  - 10 h) a reaction for conversion of a nitrile radical to a tetrazolyl,
  - i) a reaction for removal of the protecting groups that may be borne on the protected reactive functions,
  - j) a salification reaction with a mineral or organic acid or with a base to give the corresponding salt,
  - k) a reaction for resolution of the racemic forms into resolved products,
- 15 the said compound of formula (I) thus being obtained in any possible racemic, enantiomeric or diastereoisomeric isomer form.

212. A process for preparing the compound of formula (I) according to claim 1, corresponding to formula (IA) according to any one of claims 165, 167 or 174, characterized in that an acid of formula
- 20 (D):



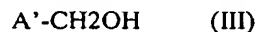
in which A' has the meaning given in any one of claims 165, 167 or 174 for A, in which the possible reactive functions are optionally protected with protecting groups,

is subjected to an esterification reaction to give an acid ester of formula (II)



in which A' has the meaning given above and alk represents an alkyl radical,

is subjected to a reduction reaction to give the alcohol of formula (III):



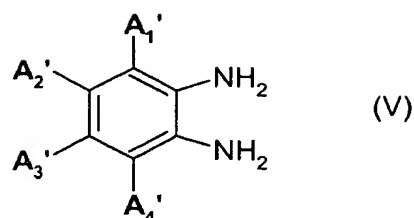
in which A' has the meaning given above,

- 30 which is oxidized to the aldehyde of formula (IV):



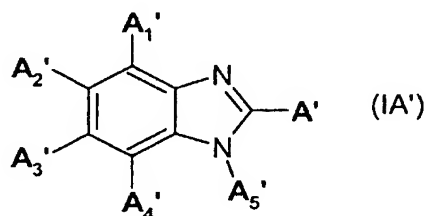
in which A' has the meaning given above,

and the compound of formula (D) or compound of formula (IV) as defined above are reacted with a diamine of formula (V):



in which A1', A2', A3' and A4' have the meanings given in any one of claims 165, 167 or 174, respectively, for A1, A2, A3 and A4, in which the possible reactive functions are optionally protected  
5 with protecting groups,

to give a compound of formula (IA'):



10

in which A5' has the meaning given in any one of claims 165, 167 or 175 for A5, in which the possible reactive functions are optionally protected with protecting groups, and A1', A2', A3' and A4' have the meanings given above,

the compound of formula (IA') is a compound which may be a compound of formula (IA) and which,  
15 in order to obtain a compound or another compound of formula (IA), may be subjected, if desired and if necessary, in any order, to one or more of the conversion reactions chosen from among the reactions a) to k) defined in Claim 211,

the said compound of formula (IA) thus obtained being in any possible racemic, enantiomeric or diastereoisomeric isomer form.

20

213. As medicinal compounds, the compounds of formula (I) as defined in any one of Claims 161 to 178, and also the addition salts with pharmaceutically acceptable mineral and organic acids or with pharmaceutically acceptable mineral and organic bases of the said compounds of formula (I).

25 214. As medicinal compounds, the compounds of formula (I) as defined in any one of Claims 156 to 159, and also the addition salts with pharmaceutically acceptable mineral and organic acids or with pharmaceutically acceptable mineral and organic bases of the said compounds of formula (I).

215. Pharmaceutical compositions containing, as active principle, at least one of the compounds of formula (I) as defined in any one of claims 156 to 159 or claims 161 to 178, or a pharmaceutically acceptable salt of this product or a prodrug of this compound and a pharmaceutically acceptable support.
216. Use of the compounds of formula (I) as defined in any one of claims 156 to 159 or claims 161 to 178, or of pharmaceutically acceptable salts of these compounds, for the preparation of a medicinal product intended for inhibiting the activity of a kinase protein.
217. Use of a compound of formula (I) as defined in any one of claims 156 to 159 or claims 161 to 178, for the preparation of a medicinal product for treating or preventing a disease characterized by deregulation of the activity of a kinase protein.
218. Use according to claim 216, in which the kinase protein is a tyrosine kinase protein.
219. Use as defined in claim 216, in which the kinase protein is chosen from the following group: FGFR1, FGFR2, FGFR3, FGFR4, FGFR5, flt-1, IGF-1R, KDR, PDGFR, tie2 and VEGFR.
220. Use as defined in claim 216, in which the kinase protein is KDR.
221. Use as defined in Claim 216, in which the kinase protein is tie2.
222. Use as defined in Claim 216, in which the kinase protein is in a cell culture.
223. Use as defined in Claim 216, in which the kinase protein is in a mammal.
224. Use of a compound of formula (I) as defined in any one of claims 156 to 159 or claims 161 to 178, for the preparation of a medicinal product for treating or preventing a disease chosen from the following group: disorders of the proliferation of blood vessels, fibrotic disorders, disorders of the proliferation of "mesangial" cells, metabolic disorders, allergies, asthma, thrombosis, diseases of the nervous system, retinopathy, psoriasis, rheumatoid arthritis, diabetes, muscle degeneration and cancers.
225. Use of a product of formula (I) as defined in any one of claims 156 to 159 or claims 161 to 178, for the preparation of a medicinal product for treating or preventing a disease chosen from the following group: disorders of the proliferation of blood vessels, fibrotic disorders, disorders of the

proliferation of "mesangial" cells, retinopathy, psoriasis, rheumatoid arthritis, diabetes, muscle degeneration and cancers.

226. Use of a compound of formula (I) as defined in any one of claims 156 to 159 or claims 161 to 178, for the preparation of a medicinal product for preventing or treating diseases associated with an uncontrolled angiogenesis.

227. Use of a compound of formula (I) as defined in any one of claims 156 to 159 or claims 161 to 178, for the preparation of a medicinal product for treating diseases in oncology.

228. Use of a compound of formula (I) as defined in any one of claims 156 to 159 or claims 161 to 178, for the preparation of a medicinal product for treating cancers.

229. Use according to claim 227, for the treatment of solid tumours.

230. Use according to Claim 228 or 229, for the treatment of cancers that are resistant to cytotoxic agents.

231. Use according to claim 228 or 229, for the treatment of breast cancer, stomach cancer, cancer of the ovaries, cancer of the colon, lung cancer, brain cancer, cancer of the larynx, cancer of the lymphatic system, cancer of the genito-urinary tract including the bladder and the prostate, bone cancer and cancer of the pancreas.

232. Use according to claim 228 or 229, for the treatment of breast cancer, cancer of the colon or lung cancer.

233. Use of the compounds of formula (I) as defined in claims 156 to 159 or claims 161 to 178, for the preparation of medicinal products intended for cancer chemotherapy.

234. Use of the compounds of formula (I) as defined in claims 156 to 159 or claims 161 to 178, for the preparation of medicinal products intended for cancer chemotherapy alone or in combination.

235. Compounds of formula (I) as defined in any one of claims 156 to 159 or claims 161 to 178, as kinase inhibitors.

236. Compounds of formula (I) as defined in any one of claims 156 to 159 or claims 161 to 178, as KDR inhibitors.

237. Compounds of formula (I) as defined in any one of claims 156 to 159 or claims 161 to 178, as  
5 tie2 inhibitors.

238. A method according to claim 190 or claim 191 wherein the cancer being treated is breast cancer, stomach cancer, cancer of the ovaries, cancer of the colon, lung cancer, brain cancer, cancer of the larynx, cancer of the lymphatic system, cancer of the genito-urinary tract, bladder, prostate, bone  
10 cancer or cancer of the pancreas.

## INTERNATIONAL SEARCH REPORT

 International Application No  
 PCT/GB 02/04763

## A. CLASSIFICATION OF SUBJECT MATTER

 IPC 7 A61K31/4184 C07D403/04 C07D403/14 C07D413/04 C07D413/14  
 C07D405/14 C07D409/14 C07D491/04 C07D401/14 C07D487/04  
 C07D471/04 A61P35/00 //(C07D491/04,319:00,235:00)

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C07D A61K A61P

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, BEILSTEIN Data, CHEM ABS Data

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 01 53268 A (AGOURON PHARMACEUTICALS, INC.) 26 July 2001 (2001-07-26) the whole document ---	1-238
X	WO 01 02369 A (AGOURON PHARMACEUTICALS, INC) 11 January 2001 (2001-01-11) the whole document ---	1-238
X	WO 01 00610 A (AVENTIS PHARMA DEUTSCHLAND GMBH) 4 January 2001 (2001-01-04) the whole document ---	1-238
X	EP 1 006 114 A (GRELAN PHARMACEUTICAL CO., LTD.) 7 June 2000 (2000-06-07) the whole document ---	1-238
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☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

## \* Special categories of cited documents:

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
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- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

- \*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- \*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- \*G\* document member of the same patent family

Date of the actual completion of the international search

10 February 2003

Date of mailing of the international search report

20/02/2003

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## INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 02/04763

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 22 63 878 A (CIBA-GEIGY AG) 5 July 1973 (1973-07-05) * le document en entier, en particulier composés 19-26 *	1-238
X	DE 21 30 030 A (BAYER AG) 21 December 1972 (1972-12-21) the whole document	1-238
X	DE 21 30 029 A (BAYER AG) 21 December 1972 (1972-12-21) the whole document	1-238
X	SINGH S P ET AL: "Formation and dehydration of a series of 5-hydroxy-5-trifluoromethyl- 4,5-dihydropyrazoles" JOURNAL OF FLUORINE CHEMISTRY, vol. 94, no. 2, 5 April 1999 (1999-04-05), pages 199-203, XP004163162 the whole document	1-238
X	SOOS T ET AL: "Novel thermal rearrangement of fused diaryl-v-triazolium salts to neutral indazole derivatives. Fused azolium salts. 16" JOURNAL OF ORGANIC CHEMISTRY, vol. 62, no. 4, February 1997 (1997-02), pages 1136-1138, XP002204296 the whole document	1-238
X	HUBERT A J ET AL: "Thermolyse von v-Triazolyl-Derivaten" CHEMISCHE BERICHTE, vol. 103, no. 12, 7 December 1970 (1970-12-07), pages 3811-3816, XP002204297 the whole document	1-238
X	JOSHI K C ET AL: "Investigation of the reactions of 2-hydrazino-benzimidazoles with beta-diketones: synthesis of 2-(3,5-disubstituted-1H-pyrazol-1-yl) benzimidazoles" JOURNAL OF HETEROCYCLIC CHEMISTRY, vol. 25, no. 6, 1988, pages 1641-1643, XP002204298 the whole document	1-238

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## INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 02/04763

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>TAGAKI K ET AL: "Synthesis of pyrimidino'4,5-b! '1,5!benzodiazepin-2-ones and pyrimidino'1,6-a!benzimidazol-1-ones from 4-ethoxycarbonylamino-1H-1,5-benzodiazepine-3-carbonitrile via 4-(2-aminoanilino)pyrimidin-2(1H)-one-5-carbonitriles"</p> <p>JOURNAL OF HETEROCYCLIC CHEMISTRY, vol. 23, no. 5, 1986, pages 1443-1449, XP002204299</p> <p>the whole document</p> <p>---</p>	1-238
X	<p>SENGA K ET AL: "Synthesis of pyrazolo'1',5':1,2!-1,3,5-triazino'5,6-a!benzimidazoles"</p> <p>JOURNAL OF HETEROCYCLIC CHEMISTRY, vol. 12, no. 5, October 1975 (1975-10), pages 899-901, XP002204300</p> <p>the whole document</p> <p>---</p>	1-238
X	<p>FINAR I L ET AL: "The preparation and some reactions of 4-formyl-1-phenyl-pyrazoles"</p> <p>JOURNAL OF THE CHEMICAL SOCIETY, 1961, pages 2733-2738, XP002204301</p> <p>the whole document</p> <p>---</p>	1-238
X	<p>DATABASE CAPLUS 'Online! CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US;</p> <p>Database accession no. 1995:505008</p> <p>XP002204302</p> <p>RN 109073-55-4</p> <p>&amp; J. INDIAN CHEM. SOC., vol. 70, no. 11-12, 1993, pages 1035-1042,</p> <p>---</p>	1-238
X	<p>DATABASE CAPLUS 'Online! CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US;</p> <p>Database accession no. 1975:97992</p> <p>XP002204303</p> <p>RN 55548-52-3</p> <p>&amp; KHIM. GETEROTSIKL. SOEDIN., no. 12, 1974, pages 1690-1694,</p> <p>---</p>	1-238
X	<p>DATABASE CAPLUS 'Online! CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US;</p> <p>Database accession no. 1994:605262</p> <p>XP002204304</p> <p>rn 157946-31-1, 157946-32-2, 157946-33-3, 157946-34-4, 157046-35-5</p> <p>&amp; J. CHEM. RES., SYNOP., no. 7, 1994, pages 286-287,</p> <p>---</p> <p>-/--</p>	1-238



## INTERNATIONAL SEARCH REPORT

International Application No  
PCT/GB 02/04763

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DATABASE CROSSFIRE BEILSTEIN 'Online! Beilstein Institut zur Förderung der Chemischen Wissenschaften, Frankfurt am Main, DE; XP002204305 Beilstein Registry Number 1115622 & KHIM. FARM. ZH., vol. 7, no. 6, 1973, page 18 ----	1-238
X	ESSASSI E M ET AL: "Synthèse et hétérocyclisation des (pyrazolyl-3(5))-2-benzimidazoles en catalyse de transfert de phase" BULLETIN DES SOCIÉTÉS CHIMIQUES BELGES, vol. 96, no. 1, 1987, pages 63-67, XP008005414 the whole document ----	1-238
E	WO 03 004488 A (CHIRON CORPORATION) 16 January 2003 (2003-01-16) the whole document -----	1-238

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/GB 02/04763

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:  
  
Although claims 180-210 and 238 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
2. ☒ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:  
  
see FURTHER INFORMATION sheet PCT/ISA/210
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

### Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

## FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Claims Nos.: 1-3, 5-8, 10-13, 143, 161-167, 173-175, 179-213, 215-238  
(all in part)

Present claims 1-3, 5-8, 10-13, 143, 161-167, 173-175, and implicitly 179-213, 215-238 relate to an extremely large number of possible compositions and compounds, and their use. Support within the meaning of Article 6 PCT and/or disclosure within the meaning of Article 5 PCT is to be found, however, for only a very small proportion of the compounds and compositions claimed.

Furthermore, the initial phase of the search revealed a very large number of documents relevant to the issue of novelty. So many documents were retrieved that it is impossible to determine which parts of the claim(s) may be said to define subject-matter for which protection might legitimately be sought (Article 6 PCT).

In the present case, the claims so lack novelty and/or support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible. Consequently a complete search has only been carried out for those parts of the claims which appear to be supported and disclosed, namely those parts relating to the compounds of claims 4, 9, 14-142, 168-172, 176-178, their compositions and their use.

The numbering and/or wording of certain claims is so unclear (see e.g. claims 48, 104 and 127) that a precise reference of the cited documents to the claims is impossible.

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

## INTERNATIONAL SEARCH REPORT

International Application No  
PCT/GB 02/04763

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